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HOSPITAL DEATHS IN NON-EUROPEAN CHILDREN

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This paper is an analysis of 557 consecutive deaths in non-European children aged 12 years and under, at a non-European hospital during the years 1948 and 1949. Only 'medical' deaths have been recorded. Children dying of 'surgical causes' or of 'forensic causes' are not included in the 557 deaths.

In this paper the word 'adult' refers to every patient (medical, surgical or gynaecological) over the age of 12 years. Further the abbreviation 'PM' indicates that a post-mortem examination was performed. 'DC' (Death Certificate) indicates no autopsy.

The total number of admissions at the hospital is roughly about 10,000 a year. Children formed 12.1% of all admissions in 1948 and 11.6% in 1949.

Adults: Admissions and Deaths. There were 10,361 adult admissions in 1948 and 9,226 in 1949. This difference is due to the fact that early in 1949 the number of beds in the hospital was reduced.

There were 547 adult deaths in 1948, and 430 in 1949.

Fig. 1 illustrates the monthly adult admissions and deaths. In 1948 deaths formed 5.3% of admissions as compared to 4.8% in the following year. The mortality rate in adults is higher in the colder months of the year.

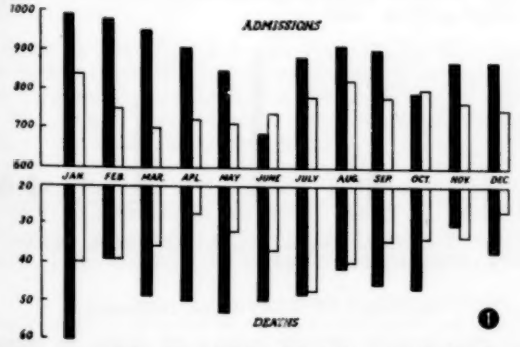

Fig. 1. Monthly Adult Admissions and Deaths. Black columns: 1948. Blank columns: 1949.

Children: Admissions. The paediatric service at the hospital has 60 beds. Only very sick children are admitted to the wards. The rest are treated as out-patients. The average number of children seen each year as out-patients number 30,000-40,000, and of these only the very ill (some 3% of the out-patients) are admitted for in-patient treatment.

The total monthly admissions of children (including prematures) in absolute figures, is indicated in Fig. 2.

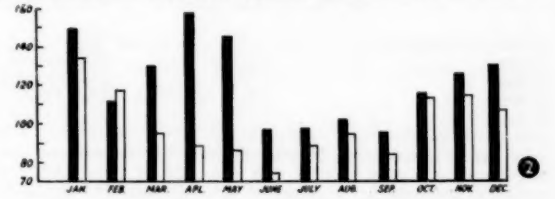

Fig. 2. Total Monthly Admissions. Black columns: 1948. Blank columns: 1949.

In 1948, 1,451 children were admitted, and 1,195 in 1949. The age distribution of these admissions is shown in Fig. 3.

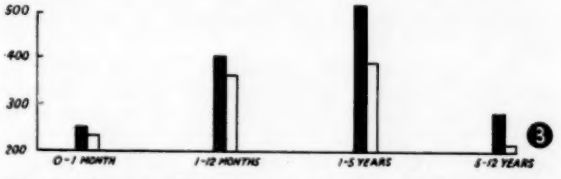

Fig. 3. Annual Admissions: Age Groups. Black columns: 1948. Blank columns: 1949.

The designation '0-1 Month' in Fig. 3 *also includes* premature babies. These two categories are not listed separately here because, owing to statistical difficulties, it is not possible to determine exactly how many premature babies were admitted in 1948 and 1949, since many of them are not admitted as prematures, but as 'infant', 'newlyborn', 'lodger baby', or with a diagnosis such as 'atelectasis of the lung' if the child happened to be ill. Hence the number of admissions in children (excluding prematures) up to the age of one month also cannot be determined. This leads to difficulty in establishing the mortality rates in these two categories.

In the warm months of the years analysed, the child admissions form 12%-13% of the total hospital admissions, and 10%-11% in the colder months. However in January, April and May 1948 the admissions were disproportionately large—being 13%-15% of the total admissions.

Children: *Deaths.* Of the 557 deaths to be analysed, 350 died in 1948 and 207 in 1949. These total figures also include premature babies. Table I gives further details of these figures:

It is stressed that the group '0-1 month' is inclusive of prematures. The aggregate mortality rate in all children (prematures included) was 25% in 1948 and 17% in 1949.

TABLE I—ANALYSIS OF 557 DEATHS

1948		1949	
Total number of child deaths	350	Total number of child deaths	207
Number without autopsy	135	Number without autopsy	113
Number with autopsy	215	Number with autopsy	94
Of The 135 DC Cases:		*Of The 113 DC Cases:*	
30 were prematures		46 were prematures	
15 were	0—1 month	12 were	0—1 month
54 were	1—12 months	28 were	1—12 months
32 were	1—5 years	18 were	1—5 years
4 were	5—12 years	9 were	5—12 years
Of The 215 PM Cases:		*Of The 94 PM Cases:*	
8 were prematures		2 were prematures	
24 were	0—1 month	14 were	0—1 month
92 were	1—12 months	38 were	1—12 months
70 were	1—5 years	32 were	1—5 years
21 were	5—12 years	8 were	5—12 years
Of the 38 prematures 21 were males. The total number of non-premature cases in 1948 was 312, and of these 66% had autopsies performed. Further, of this number, 163 (or 52%) were males.		Of the 48 prematures 22 were males. The total number of non-premature cases in 1949 was 159, and of these 58% had autopsies performed. Further, of this number, 89 (or 56%) were males.	

The monthly incidence of the 350 deaths in 1948 and the 207 deaths in 1949 is shown in absolute figures in Fig. 4.

Deaths in January, April and May are disproportionately high, as are also admissions in these months (Fig. 2).

The deaths among prematures do not show any particular monthly preponderance, being distributed more or less equally throughout all the months of the year. The mortality rate among children (non-premature) also does not show any particular monthly or seasonal preponderance, excepting in January 1948 during which there was an exceptionally high mortality, mainly cases of bronchopneumonia and gastro-enteritis.

The total child deaths, according to age groups, is illustrated in absolute figures in Fig. 5.

As pointed out before, although the deaths in the two groups 'Prematures' and '0-1 month' are known, the exact number of admissions in these two categories is not known; hence it is not possible to determine the exact mortality rates in these two separate categories. Table II gives details of the number of child deaths per year expressed as a % of the child admissions during the year under examination:

TABLE II—MORTALITY RATES: AGE GROUPS

	0—1 *month*	1—12 *months*	1—5 *years*	5—12 *years*
1948	31%	36%	19%	9%
1949	32%	18%	13%	8%

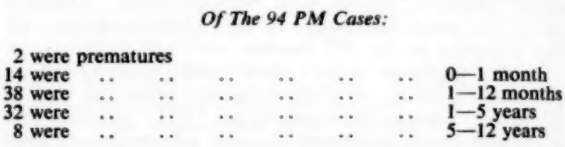

Fig. 4. Total Monthly Deaths. Black columns: 1948. Blank columns: 1949.

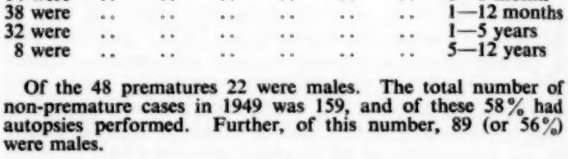

Fig. 5. Total Child Deaths: Age Groups. Black columns: 1948. Blank columns: 1949.

ANALYSIS OF INDIVIDUAL DISEASES

The classification of the causes of death in young children is very difficult. What, for example, can be regarded as the cause of death when the death certificate states 'Gastro-enteritis, dehydration, bronchopneumonia, malnutrition and rickets'? A large proportion of non-European babies are chronically malnourished, and this is an important factor in their high mortality in hospital. It is surprising how even seemingly well-nourished infants come to autopsy and are found to

have grossly fatty livers. Two other factors responsible for the high mortality are, firstly, that with few exceptions, only very ill patients are admitted to the wards; and secondly, that many of the children are only brought to hospital when they are moribund. A chronically malnourished infant who develops broncho-pneumonia or severe gastro-enteritis and is brought to hospital *in extremis* is unlikely to recover.

There are two conditions for which accurate post-mortem figures are not available: malnutrition and syphilis. Although it is known that malnutrition is a very common finding, it is not mentioned as a cause of death or a contributory cause; unless it is very gross. Congenital syphilis is rarely mentioned on the death certificate, and is rarely manifested grossly at autopsy. However, clinically it is known to be very common.

Gastro-Enteritis. In this investigation, all cases which died of:

Gastro-enteritis;

Gastro-enteritis, broncho-pneumonia and malnutrition;

Gastro-enteritis, rickets and congenital syphilis,

and various combinations of the above (provided gastro-enteritis is mentioned in every one); or with a background of tuberculosis, or an episode of aspiration pneumonia or atelectasis, are listed as having died of Gastro-enteritis.

Admissions: *Gastro-Enteritis.* The number of cases admitted (according to age groups) in 1948 and 1949 is shown in Fig. 6.

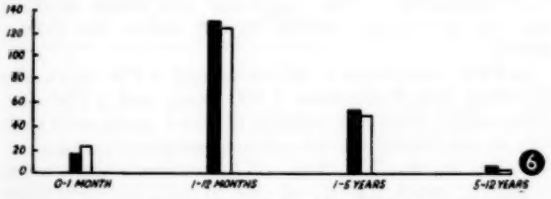

Fig. 6. Admissions: Gastro-Enteritis. Black columns: 1948. Blank columns: 1949.

As far as possible the designation '0-1 month' does not include cases of gastro-enteritis among prematures. The total number in 1948 was 208, and 203 in 1949. In the former year cases of gastro-enteritis formed 14% of all child admissions (prematures included) and roughly 16% (prematures excluded). Comparative figures for 1949 are 17% and 19%. In the warm months the percentage is slightly higher.

Deaths: *Gastro-Enteritis.* In 1948 there were 70 deaths from gastro-enteritis. This figure does not include cases where gastro-enteritis was the mode of exitus in premature babies. Of the 70 cases 35 had autopsies performed. Males accounted for 32 of the 70 cases. In 1949 there were 35 deaths due to gastro-enteritis, 19 being males, and a similar number had autopsies performed.

The deaths, in absolute figures, according to age groups are indicated in Fig. 7.

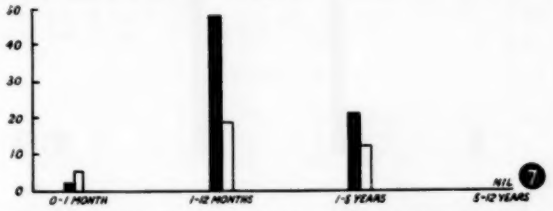

Fig. 7. Gastro-Enteritis: Deaths. Black columns: 1948. Blank columns: 1949.

Table III illustrates the percentages which deaths from gastro-enteritis formed of all deaths in the particular age groups:

TABLE III—GASTRO-ENTERITIS: DEATHS AS % OF ALL CHILD DEATHS

	0—1 *month*	1—12 *months*	1—5 *years*	5—12 *years*
1948	5%	33%	20%	0%
1949	19%	26%	22%	0%

Table IV illustrates, firstly, the total monthly deaths from gastro-enteritis, and secondly the percentage which these deaths formed of the total child deaths in the respective months (*see Table IV below*).

In 1948 gastro-enteritis formed 19% of all deaths, and 17% in 1949 (and slightly higher percentages if prematures are excluded). Table IV indicates that the percentage of deaths due to gastro-enteritis tends to be higher in the warmer months. It may also be noted that—as pointed out before, gastro-enteritis formed 14% of all admissions in 1948 and 17% in 1949.

The mortality rate of gastro-enteritis in 1948 was 34% and exactly half that figure in 1949.

Pneumonia. This is regarded as the cause of death in all cases listed as having died of bronchopneumonia, bronchiolitis, or lobar pneumonia, alone, or of these plus various combinations of malnutrition, rickets, congenital syphilis or aspiration pneumonia. A few cases of pulmonary tuberculosis who died of broncho-

TABLE IV—TOTAL DEATHS; AND DEATHS AS % OF ALL DEATHS

	Jan.	*Feb.*	*March*	*April*	*May*	*June*	*July*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*
1948	24	8	8	5	3	5	2	0	4	2	4	5
	40%	32%	31%	13%	8%	16%	11%	0%	19%	8%	16%	21%
1949	3	7	5	4	2	0	1	1	1	3	5	3
	13%	37%	26%	27%	11%	0%	11%	7%	9%	17%	18%	18%

pneumonia are also included. Premature babies dying of this cause are excluded. Cases of pneumonia with gastro-enteritis are not classified here, but under gastro-enteritis.

Admissions: *Pneumonia.* In 1948 and 1949 the number of cases admitted (according to age groups) was as follows:

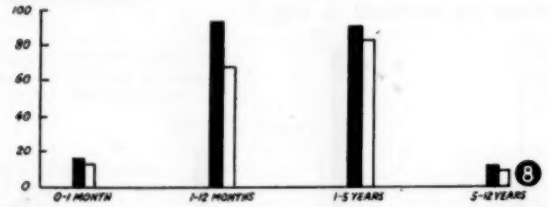

Fig. 8. Admissions: *Pneumonia.* Black columns: 1948. Blank columns: 1949.

As far as possible the designation '0-1 month' does not include cases of pneumonia among prematures. The total number in 1948 was 215 and 179 in 1949. In the former year pneumonia formed 15% of all child admissions (prematures included) and roughly 17% (prematures excluded). Comparative figures for 1949 are identical. In the warm months the percentage is slightly lower.

Deaths: *Pneumonia.* In 1948 there were 89 deaths from pneumonia. This figure does not include cases where pneumonia was the mode of exitus in premature babies. Of the 89 cases 63 had autopsies performed; 52 of the 89 were male. In 1949 there were 35 deaths due to pneumonia, 17 being males; 25 cases underwent autopsy.

The deaths, in absolute figures, according to age groups are indicated in Fig. 9.

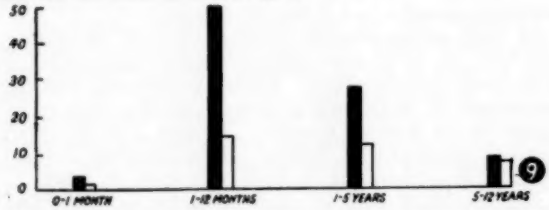

Fig. 9. Pneumonia: *Deaths.* Black columns: 1948. Blank columns: 1949.

Note: (a) The difference between Fig. 6 (Admissions: Gastro-Enteritis) and Fig. 8 (Admissions: Pneumonia).
(b) The similarity between Fig. 7 (Deaths: Gastro-Enteritis) and Fig. 9 (Deaths: Pneumonia).

Table V illustrates the percentage which deaths from pneumonia formed of all deaths in the particular age groups:

TABLE V—PNEUMONIA: DEATHS AS % OF ALL DEATHS

	0—1 *month*	1—12 *months*	1—5 *years*	5—12 *years*
1948	8%	34%	26%	36%
1949	4%	21%	24%	50%

Table VI illustrates, firstly, the total monthly deaths from pneumonia, and secondly the percentage which these deaths formed of the total child deaths in the respective months (*see Table VI below*).

In 1948 pneumonia formed 25% of all deaths, and 17% in 1949 (and slightly higher percentages if prematures are excluded). Table VI indicates that there is no well-marked seasonal predilection. It may also be noted that, as pointed out before, pneumonia formed 15% of admissions both in 1948 and in 1949.

The mortality rate of pneumonia in 1948 was 40%; and exactly half that figure in 1949.

Gastro-enteritis and pneumonia together accounted for 29% of all child admissions and 44% of all child deaths in 1948. In 1949 they accounted for 32% of all admissions, and 34% of all deaths.

Whooping Cough Bronchopneumonia. This is dealt with separately. The diagnosis was made clinically and not on culture, which, in our hands has been a failure.

In 1948 there were 4 DC cases and 6 PM cases. The following year there were 2 DC cases and 1 PM case. Ages varied from five months to three years, and there was no particular sex or seasonal preponderance.

Tuberculosis. No cases of tuberculosis were found in infants under the age of one month, but in the rest of the 557 deaths tuberculosis anywhere in the body formed a high percentage. Details are given in Table VII (*on p.* 997).

The numbers indicate, in absolute figures, the number of cases in which the presence of tuberculosis was demonstrated clinically or at autopsy. The percentages indicate the cases showing tuberculosis (anywhere in the body) in the various age groups. In 1948 tuberculosis was found in 14% of all deaths (prematures included), 15% of all deaths (prematures excluded), and 26% of all deaths in children over the age of 1 month. Comparative figures for 1949 are 17%, 22%, and 26%.

TABLE VI—TOTAL DEATHS; AND DEATHS AS % OF ALL DEATHS

	Jan.	*Feb.*	*March*	*April*	*May*	*June*	*July*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*
1948	18	3	7	13	9	11	5	4	3	5	8	3
	30%	12%	27%	33%	23%	24%	26%	28%	14%	22%	32%	13%
1949	9	2	2	4	2	3	1	7	0	2	2	1
	39%	11%	11%	26%	11%	19%	11%	50%	0%	11%	7%	6%

TABLE VII—INCIDENCE OF TUBERCULOSIS

	1948		1949	
	DC	*PM*	*DC*	*PM*
1—12 months	2(3·7%)	8 (8·7%)	6 (21·5%)	9 (24%)
1—5 years ..	10 (31%)	19 (27%)	8 (44%)	9 (28%)
5—12 years ..	1 (25%)	8 (38%)	1 (11%)	2 (25%)

*Tuberculous Meningitis.** In the two-year period under discussion, 32 cases were diagnosed as suffering from tuberculous meningitis. Of these, 28 died. Four were regarded as cured, but early in 1950, two of these (both females) relapsed and died. Two are still alive (both females).

Of the 28 deaths, 13 occurred in 1948. They consisted of 4 DC cases (3 being male), and 9 PM cases (3 being male). Ages varied from 8 months to 7 years. There were 3 deaths in January, 2 in each of April and September, and 1 in each of February, March, May, July and December.

Of the 15 deaths in 1949, 8 were DC cases (1 male), and 7 PM cases (5 male). Ages varied from 7 months to 6 years. There were 3 deaths in November, 2 in each of June, August and December, and 1 in each of January, March, May and October.

Non-Tuberculous Meningitis. There were 23 such cases. Details are shown in Table VIII:

TABLE VIII

	1948		1949	
	DC	*PM*	*DC*	*PM*
Meningococcal meningitis	3	4	—	1
Pneumococcal meningitis	1	4	1	1
Influenzal meningitis	1	—	—	1
B. coli meningitis	—	1	—	—
Strep. viridans meningitis .. (cerebral abscess also present) ..	—	1	—	—
No organism found	—	1	2	1

Meningococcal septicaemia accounted for three deaths in 1948, and in 1949 there was one death due to pneumococcal septicaemia.

No particular seasonal incidence was noted among the cases of meningitis.

Typhoid Fever. This was responsible for six deaths in 1948—all autopsied. One case was in a female of 10 months. In the others the ages varied from 2-12 years. There was one death in 1949 (autopsy performed). With the exception of two cases, all the deaths occurred during the colder months of the year.

Besides the usual run of the common post-mortem conditions (pneumonia, gastro-enteritis, tuberculosis, malnutrition, chronic cardiac conditions, nephritis) the following cases must be noted:

1. Four deaths in one of which amoebiasis was proven (this one being 3 years old), and the probable cause of death in the other three (all of whom were under a year).
2. Two cases of congenital atresia of the bile ducts. One died at the age of two months, the other at five months.
3. One case of pulmonary embolism in a female of seven months, demonstrated at autopsy.
4. One death due to infective hepatitis in a male of four years. (Clinical diagnosis, autopsy not done.)
5. One case of neuroblastoma and two of medulloblastoma.
6. No deaths from blood dyscrasias. This condition is very rare in Bantu children. One case is known (not included in this investigation) of a Bantu girl just over 12 years of age, who died of an acute myeloid leukemia.

*A full account of this subject is to be published by Dr. S. Selby, Paediatrician, Coronation Hospital.

SUMMARY

1. A total of 557 deaths in non-European children in hospital has been analysed over a two-year period.

2. Over 1,000 children (up to the age of 12 years) were admitted to the wards each year, these being roughly 3% of the out-patients seen during the year.

3. With the exception of prematures, autopsies were performed in about 60% of cases.

4. The overall mortality rate among children did not show any well-marked seasonal preponderance.

5. The overall mortality rate was 25% in 1948 and 17% in 1949. It decreased with age.

6. Important factors in the high mortality rate are:
(a) Widespread malnutrition.
(b) Only very ill children are admitted to the wards.
(c) Due to poverty, fear, ignorance, superstition and neglect, many babies are only brought to hospital when moribund.

7. The commonest causes of death in children are pneumonia and gastro-enteritis. Together they account for about a third of admissions and deaths.

8. The mortality rate of gastro-enteritis in 1948 was 34% and exactly half that figure in 1949. The mortality rate of pneumonia was 40% in 1948 and 20% the following year.

9. Tuberculosis anywhere in the body was found in 26% of children over the age of one month.

10. Of 32 cases of tuberculous meningitis diagnosed and treated, only two are still alive.

I wish to express my thanks to Dr. V. D. Gordon, Superintendent, for permission to publish this paper; to Dr. S. Selby, for allowing me to have access to his records; and to Drs. N. Feldman, H. Falcke and H. Cohen, for their advice and assistance.

ABSTRACT

F. Hernandez Morales and D. S. Stevenson: *Treatment of Taenia saginata with Hexylresorcinol Emulsion administered into the Duodenum.* Puerto Rico J. Publ. Health and Trop. Med. (1949): **25**, pp. 87-96.

The authors treated patients infested with Taenia saginata with an emulsion prepared from 1 gm. of crystalline hexylresorcinol, 1 gm. of acacia and 30 c.c. of water, administered directly into the duodenum through a duodenal tube *in situ*. No dietary restrictions or purgatives were prescribed before the therapy.

The total number of patients treated in this manner was 28. Cure was obtained in 26. The absence of toxic effects coupled with the fact that no purgatives or dietary restrictions are needed make hexylresorcinol in the form of an emulsion the most effective treatment against Taenia saginata.

South African Medical Journal
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VAN DIE REDAKSIE

ANGIOLOGY*

'N TYDSKRIF AAN VAATKWALE GEWY

Dit is altyd met 'n mate van vrees dat 'n mens die verskyning van 'n nuwe mediese tydskrif begroet want die aantal geneeskundige publikasies het sulke afmetings aangeneem dat dit moeilik geword het om die jongste ontwikkelings selfs op 'n beperkte gebied te volg.

In die afgelope jare daarenteen was daar 'n toenemende aantal fundamentele bydraes tot ons kennis van die vaatstelsel. Tydskrifte wat spesifiek oor vaatkundige onderwerpe handel, is skaars en kan nie plek inruim vir die groot aantal kliniese verslae en die navorsingswerk wat elke maand op hierdie gebied verskyn nie.

Die instelling van 'n Tydskrif wat uitsluitlik aan vaatkwale gewy is, is dus 'n tydige stap. *Angiology* beoog die aanbieding van fundamentele bydraes in verband met die vele fasette van die probleme van vaatkwale. Die fundamentele kwessies waarvoor die beroep te staan kom by die ontstaan van vaatkwale is beide geneeskundig en sosiologies oorweldigend in omvang. Die vordering wat in die bestudering van perifere vaatkwale gemaak is tesame met die stygende aantal gevalle van bloedsomloopkwale regverdig byna die ontwikkeling van angiologie as 'n medies-sjirurgiese spesialiteitsgebied.

Die uitdrukking ‚perifere vaatkwaal' word dikwels gebruik om slegs na die kwale van die bloedvate in die uiterste ledemate te verwys. Hierdie opvatting is egter glad te eng en die aantasting van die perifere vate is maar te dikwels slegs een aspek van 'n steuring in die gestel. Gevolglik lei die bestudering van die perifere vaatstelsel 'n mens langs baie paadjies wat nie verwag of vermoed word nie. Soos die Redakteurs in hulle inleidingsartikel van die eerste nommer van *Angiology* daarop wys: ‚Ten spyte van die belangrike prestasies is betreklik weinig bekend in verband met die etiologiese faktore wat met slagaarverharding, hoë bloeddruk, binne-aarse klontvorming, ens., in verband staan. Die uitdaging van hierdie probleme is van groter betekenis as ooit en navorsing word op 'n ontsaglike skaal gedoen met inskakeling van die pogings van die fisioloog, bioloog, bioskeikundige, farmakoloog, bloedkundige,

* *Angiology*: *The Journal of Vascular Diseases.* Halfmaandeliks onder beskerming van *The Angiology Research Foundation* uitgegee deur *Williams and Wilkins Company, Mount Royal and Guildford Avenues, Baltimore 2, Md., U.S.A.* Intekengeld $8 per deel.

EDITORIAL

ANGIOLOGY*

A JOURNAL DEVOTED TO VASCULAR DISEASES

It is always with a certain amount of apprehension that one greets the advent of a new medical journal, for the number of medical publications has assumed such proportions that it has become difficult to follow recent developments even in a limited field.

On the other hand, within recent years there has been an increasing number of fundamental contributions to our knowledge of the vascular system. Journals dealing specifically with vascular subjects are few and unable to accommodate the large number of clinical reports and the research work appearing every month in this field.

The inauguration of a Journal devoted exclusively to vascular diseases is, therefore, a timely innovation. *Angiology* aims at presenting fundamental contributions to the multiple facets of the problems of vascular diseases. The issues which confront the profession in the development of vascular diseases are of overwhelming magnitude, both medically and sociologically. The advances made in the study of peripheral vascular diseases, coupled with the increasing incidence of circulatory disorders, almost justify the development of angiology as a medico-surgical speciality.

Often the term ' peripheral vascular disease ' is used to refer to diseases of the blood vessels of the extremities only. However, this is far too narrow a concept and the involvement of the peripheral vessels too often presents but one aspect of a systemic disturbance. Consequently, the study of the peripheral vascular system leads one along many pathways not expected or suspected. As the Editors point out in their editorial of the first issue of *Angiology*: ' Despite the notable achievements, relatively little is known about the etiological factors involved in arteriosclerosis, hypertension, intravenous clotting, etc. More than ever before, the challenge of these problems assumes greater importance, and research is being continued on a vast scale, combining the efforts of the physiologist, biologist,

* *Angiology*: *The Journal of Vascular Diseases.* Published bi-monthly under the auspices of *The Angiology Research Foundation* by the Williams and Wilkins Company, Mount Royal and Guildford Avenues, Baltimore 2, Md., U.S.A. Subscription: $8 per volume.

internis en snykundige.' *Angiology* maak dit sy werk om die jongste vordering in verband met hierdie probleme verslag te doen. Daarbenewens sal *Angiology* inleidingsartikels oor vaatprobleme aanbied ten einde aan die leser kommentaar en gegewens beskikbaar te stel wat gewoonlik nie in formele artikels ingesluit is nie.

Terselfdertyd is 'n *Angiology Research Foundation* deur die Redaksieraad gestig om as ontvanger van die inkomste uit hierdie nuwe tydskrif en dié uit ander bronne in die vorm van bemakings op te tree. Hierdie geld sal uitsluitlik aangewend word vir die bevordering van navorsing na die baie probleme in verband met vaatkwale.

Hierdie hele skema is 'n baie waardevolle en sal ongetwyfeld aansienlike steun van die beroep in Suid-Afrika ontvang.

biochemist, pharmacologist, haematologist, internist and surgeon.' *Angiology* has made it its function to report the latest advances in these problems. In addition, *Angiology* will present editorials related to vascular problems to convey to the reader comments and data not ordinarily included in formal articles.

At the same time an *Angiology Research Foundation* has been established by the Editorial Board, as the recipient of any income derived from this new periodical together with that from other sources in the form of endowments. These funds will be used exclusively for the encouragement of research in the many problems related to vascular diseases.

This whole project is a most valuable one and will undoubtedly derive considerable support from the profession in South Africa.

TREATMENT OF SANDWORM DISEASE WITH HETRAZAN

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Sandworm disease (creeping eruption, larva migrans) is an infestation of the human skin with larvae of the dog or cat hookworm. No treatment has been found which invariably cures the disease. Freezing with ethyl chloride or carbon dioxide snow are often satisfactory, though painful, and various substances have been applied as paints with varying success. Systemic therapy with antimony compounds (Cawston, 1934; Smith, 1943; Dolce and Franklin, 1945) and arsenic (Hitch, 1947) produced varying results. Although these metallic compounds apparently produced some cures, experience shows that failures occur in a considerable proportion of cases. If allowance is made for spontaneous cure, which eventually occurs in every case, the alleged successes obtained with metallic compounds are still further minimized.

A recently synthesized drug, Hetrazan (diethylcarbamazine), has obtained a considerable reputation in the treatment of various forms of filariasis. It was first used by Carrion (1947) in a case of sandworm disease; giving 2 mg. per kilogram of body weight by mouth thrice daily for three weeks he found that lesions disappeared and had not recurred in a further period of five months' observation. Van de Erve (1949) treated 19 cases with Hetrazan by mouth, in doses varying from 1½ to 4 mg. per kilogram of body weight

TABLE I

Case	*Sex*	*Age in Years*	*Duration of Disease before Treatment*	*When Improvement Noted (After beginning of Treatment)*	*Duration of Treatment*	*Remarks*
1.	M	2	10 days	2 days	21 days	Single track. Cured.
2.	F	36	3 weeks	7 days	21 days	Three tracks. Cured.
3.	M	8	9 weeks	7 days	14 days	Three tracks. Cured
4.	F	18	7 weeks	3 days	13 days*	Multiple tracks. Cured.
5.	F	1½	6 weeks	4 days	14 days	Three tracks. Cured.
6.	F	1 3/12	5 months	17 days	20 days	Multiple tracks. Immediate relapse lasting three days, since when no further activity.
7.	F	1 9/12	4½ months	15 days	28 days	Multiple tracks. Intermittent activity two months later.
8.	M	2 9/12	4½ months	15 days	15 days	Multiple tracks. Cured.

*Supplies of Hetrazan ran out after seven days. The condition remained active in a few tracks until a further six days' supply was obtained three weeks later.

thrice daily for periods of 3 to 20 days. Seventeen cases completed the course, and of these fourteen were cured. He concluded that the method was deserving of further trial.

Present Series. Eight cases of sandworm disease, contracted in various parts of South Africa, have been treated with Hetrazan, in doses of 2 mg. per kilogram of body weight thrice daily. Details are shown in Table I.

COMMENT

1. One case of the eight recorded was not cured after four weeks' treatment with Hetrazan.

2. Five cases had shown the disease for less than two months. In these cases the possibility of spontaneous cures having occurred is slight. Statistics of the duration of the disease in untreated cases in South Africa are not available, but one's experience suggests a normal course of from four months to a year.

3. Side effects were observed in cases 7 and 8 (brother and sister). The former had a morbilliform rash during the third week of treatment, the latter an eruption over the buttocks (i.e. the infested area) resembling erythema multiforme. These eruptions were regarded as an allergic reaction to killed parasites, as is frequently seen in cutaneous onchocerciasis treated with Hetrazan (Mazzotti, 1948). An anti-histaminic was given for a week and both eruptions cleared during that period. This must not be taken as proving that the anti-histaminic was necessarily curative.

4. It is possible that even better results could have been obtained with larger doses of Hetrazan. At the time when this series was treated (January to June, 1950) the standard dose was given as 2 mg. per kilogram of body weight thrice daily. Since then Etteldorf and Crawford (1950) have shown that doses as high as 10 mg. per kilogram of body weight may be given thrice daily for a week without signs of intoxication. It is suggested that a dosage at 6 mg. for a week may be still more satisfactory in the treatment of sandworm than that employed in this series.

CONCLUSION

Oral treatment with Hetrazan was apparently successful in seven out of eight cases of sandworm disease.

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A CASE OF Q FEVER CONTRACTED ON THE WITWATERSRAND

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This case is recorded because at the time the diagnosis was established Q fever had not been reported in this region, and clinically it presented some unusual features of this illness.

History: The patient, who was aged 33 years, landed in South Africa on 14 November 1949, having left Holland on 25 October 1949. The ship on which he voyaged stopped only at the Canary Islands before reaching Cape Town. He left the following day for Kroonstad, where he was employed on a farm from 16 November to 31 January. He then went to work on a farm in the district of Krugersdorp. He is at present employed as the manager of the farm, where mealies and lucerne are grown, and where he is in charge of the cattle and sheep.

He comes into direct contact with the sheep and cattle. He often inoculates them against 'blue tongue' and 'lumpy skin' disease. To the patient's knowledge he has never been bitten by ticks, but he has often seen them on his legs. During his stay on the farm there have been three deaths among the cattle; the first two had liver flukes and the last one, which was a calf, had para-typhoid. These animals were buried on the farm by the patient with the help of Native labourers.

On 18 March 1950 the patient suddenly fell ill with fever and a headache over the vertex of his skull. He went to bed, and at about 9.30 p.m. that night, he felt cold and his teeth began to chatter. The following day he felt much better and got out of bed; after two hours, however, he felt weak, tired and feverish. That afternoon he went to bed, but was unable to sleep and sweated profusely.

On 20 March he was again feverish and had to change his pyjamas on several occasions. During this time the patient lost his appetite completely; he did not vomit or have diarrhoea. He had no pains in his muscles or joints. On the night of 20 March he had bad dreams and nightmares which continued through the following day and night.

He remembers coming to hospital the next day in a nervous and frightened state. However, from 21 March he remembers events very vaguely indeed. There is no history of mental instability.

On Examination: When admitted the patient was

delirious and perspired profusely. His face was very flushed and his conjunctiva injected. There were three shallow ulcers one to two cm. in size on the anterior pillars of the fauces. The throat was injected. The tonsils were slightly enlarged and inflamed. The tongue was covered with a brownish fur (the patient complained of a dry mouth). The pupils were equal and reacted to light. A fine, tremulous internal and external nystagmus of a horizontal nature was noted in both eyes. Examination of the heart revealed no abnormality. A few scattered rhonchi were heard on auscultation of the chest. The spleen was not palpable, and there was no lymphadenopathy. No rash was detected. The temperature on admission was 100.6° and the pulse 104 per minute; the blood pressure was 130/84 mm. Hg. the rate of respiration was 20 per minute. A mild degree of meningism was present at this stage, otherwise no abnormalities were detected on examination of the central nervous system.

The illness was then regarded as a pyrexia of obscure origin. Numerous laboratory investigations were carried out.

Blood counts showed the development of slight anaemia, but the total white cell count and the percentage distribution of the white cells remained within normal limits.

The cerebrospinal fluid on three occasions contained 4 lymphocytes per c.mm. The biochemical findings were essentially normal.

Seven blood cultures were taken. On one occasion a coliform organism was isolated, but this was probably a contaminant for it was not isolated again.

Nine Ide and Eagle flocculation tests on blood taken at intervals between 27 March and 8 April 1950 gave negative results.

The Paul-Bunnell sheep red cell agglutination tests on blood taken at the same time gave agglutination in serum dilutions which varied from 1:28 to 0 to 1:7. Positive agglutination reactions were obtained in the tests with several bacterial antigens, including *B. typhosus O, B. paratyphosus B, Brucella melitensis, Proteus* OX19, *Proteus* OX2, and *Proteus* OXK. These were all in titres below those accepted as of diagnostic value. Repeated tests failed to show a rise to a significant level.

No parasitic or pathogenic bacteria were found in the faeces. Three thick and three thin smears, taken between 27 March and 30 March 1950, were negative for malarial parasitology and relapsing fever spirochetes. A throat swab was negative for *C. diphtheriae* and urine examination revealed a trace of albumin but no cellular deposit.

Complement fixation tests were negative on two separate occasions for epidemic and murine typhus, tick bite fever and relapsing fever.

All other examinations proved to be negative. An X-ray of the chest, soon after admission, revealed no obvious pathology; X-rays of the skull and mastoid processes were normal.

The patient became wildly delirous and was extremely noisy. He required sedatives and had to be forcibly restrained. He could only be fed with a high-calorie solution by the intranasal drip method. His temperature remained high until the tenth day after admission to hospital (Fig. 1). He became rational on the twelfth day. It was noticed that on the tenth day he continually scratched his ears, and examination revealed a bilateral otitis media, which was taken to be of a secondary nature and not the primary cause of the patient's condition. It was not present on admission.

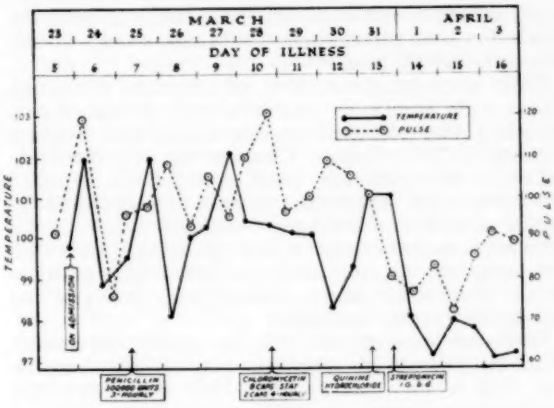

Fig. 1

On the twelfth day after admission the complement fixation test with *Rickettsia burneti* was found to be positive in a diagnostic titre of 1:50. This titre rose on the eighteenth day, the sixth day of convalescence, to 1:200.

It should be noted that 300,000 units of penicillin administered intramuscularly at three-hourly intervals, starting on the third day after admission, failed to have any effect. On the sixth day, as no diagnosis had yet been made and the temperature remained high, the patient was put on to chloromycetin for nine days. On the ninth day after admission, the patient's condition appeared to be *in statu quo*. Quinine hydrochloride, and intramuscular streptomycin were given twice daily. The next day the temperature fell to normal.

On the twelfth day of the disease the case was seen by Dr. J. H. S. Gear, who arranged to have the complement fixation test for Q fever done. This test carried out on blood collected on the twelfth day of illness proved to be positive in a titre of 1:50. The titre of the test carried out on the eighteenth day rose to 1:200. This rising titre confirmed the diagnosis of Q fever.

After defervescence the patient's condition rapidly improved and he was discharged apparently convalescent eighteen days after admission to hospital.

As Q fever had not, at that time, been reported in South Africa, the diagnosis of Q fever was not entertained until the result of the complement fixation test with *Rickettsia burneti* was found to be positive. In retrospect it is considered that the clinical picture as presented is compatible with the serological findings and subsequent diagnosis of Q fever.

Characteristic clinical features are ably set out in a review of the disease by Huebner, R. J. *et al.*[3] and Denlinger.[2] Our case resembled those described in the following respects:—

The occupation of the patient was that of a farmer's assistant and involved daily contact with cattle. The onset was sudden (Denlinger [2] states that many patients can recall the exact hour at which they became ill). He adds that despite the abruptness of the onset, the patients did not feel acutely ill at first, many of them continuing work for a time. The fever is characteristically remittent and a relative bradycardia is common. Headaches were present in 90% of cases, usually frontal with retro-orbital pain.

Chills were present in 75% of cases and drenching sweats were common. Anorexia was present during the acute stage of the illness and nausea and vomiting occurred in 25% of cases. Constipation was commonly found in the Australian cases reported by Derrick.[1] Our case was somewhat unusual in the marked mental disorder. Denlinger[2] states in a few of his cases some degree of stupor and somnolence was noted and some showed transitory confusion and disorientation. Two of his patients were frankly maniacal and had to be forcibly restrained.

Denlinger also reported that the general appearance of the majority of his cases was that of mild dehydration with a hot and flushed skin. He found that pharyngeal congestion, mild or moderate, was a common sign. All authors state that a very characteristic feature of Q fever, which differentiates it from other rickettsial diseases, is the absence of a rash, splenomegaly and lymphadenopathy.

The blood counts in cases reported are usually normal; the sedimentation rate is usually increased.

Our case differed from those reported in America and elsewhere in the absence of a definite pneumonitis, although rhonchi were detected on auscultation. Huebner *et al.*[3] reported that in one series of cases 60% showed lung lesions on X-ray examination. Derrick [1] reported no cases of pneumonitis in the Australian outbreak.

Huebner *et al.*[3] states that the diagnosis of Q fever can be established with certainty only by demonstrating a substantial rise in titre in the Q fever complement fixation test or agglutination tests or isolation of the organism. Denlinger states that a four-fold or greater rise in titre in successive blood specimens during convalescence may be considered absolutely diagnostic of Q fever. This was shown to occur in this case, but the causative organism was not isolated.

Numerous drugs were administered to our patient, and no comment concerning treatment is made. Q fever is now known to respond to Aureomycin and Chloromycetin.

Our thanks are due to Dr. J. H. S. Gear and Mr. B. Wolstenholme of the South African Institute for Medical Research for their help in the investigation of this case, and to Dr. J. B. Baynash, under whose care the patient was treated in the Johannesburg Hospital, for permission to publish these notes.

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THE Rh FACTOR

ITS PRESENT STATUS

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It is now a decade since Landsteiner and Wiener chanced upon a relationship between the serum of rabbits immunized with the blood of Rhesus monkeys and a factor in human blood, now known as the Rhesus factor. Because this discovery has attracted so much attention, it is usually overlooked that in the previous year Levine and Stetson [1] described a serious transfusion reaction in a recently delivered woman and ascribed the reaction to maternal immunization by a factor in the foetal blood, which the woman lacked. They gave a complete description of the new factor. Had this work been followed up intensively there is little doubt that, in accordance with modern usage, the factor would have become known by the name of the donor, who happened to be the woman's husband, rather than by the letters Rh. Adoption of the term Rhesus has led to considerable confusion and controversy in regard to nomenclature. The many new factors discovered in recent years have borne the names of the patient or donor and we thus have factors such as Kell, Lewis, Lutheran, Cellano, Duffy, etc. These factors, although less common and less important than the Rhesus antigen D, are capable of giving rise to transfusion reactions and to haemolytic disease of the newborn.

Following the observation of Levine and Stetson and the work of Landsteiner and Wiener, in 1941 Levine *et al.*[2] discovered the role of the Rh factor in haemolytic disease and brilliant results have followed intensive work all over the world. It is now possible to summarize the results, to review the present position and to indicate the many unanswered questions which still remain.

NOMENCLATURE

The Rhesus problem has become surrounded by such a welter of symbols, letters and numerals that many consider the subject too abstruse and are content to leave it to the specialist until finality is reached. Most of these signs have fallen by the wayside and may be ignored. It is now generally conceded that the Fisher-Race CDE/cde terminology is preferable because of its

simplicity, flexibility and the amount of immunological information it affords. In this (British) system there are the supremely important red cell antigen D (Rh$_0$ of Wiener) and the less important antigens C, E, c, d and e. Variants such as D^u and C^w are of little practical importance. Any woman or recipient of blood possessing antigen D is regarded clinically as Rh-positive. The lack of antigen D constitutes the Rh-negative condition, for practical purposes (i.e., D-negative). Such persons and, in particular, any such females, should not receive Rh-positive blood by any route. A blood donor is classified as Rh-negative only if all three antigens C. D and E are absent.

Difficulty in finding suitable names for the Rh antibodies produced by women during pregnancy or by recipients following incompatible Rh transfusions has also led to intricacies. We are thus faced with terms such as saline agglutinins; albumin agglutinins; blocking antibodies; glutinins; complete; incomplete; hyperimmune; univalent; bivalent; cryptagglutinoids, etc. As far as the clinician is concerned these terms are unimportant. He merely needs to know whether antibodies are being produced and, if so, whether they show up in saline or albumin. Occasionally the presence of antibodies can only be demonstrated by the capacity of the patient's serum to sensitize red cells and thus to produce a positive indirect Coombs' reaction. The clinical importance of this type of antibody is as yet undecided.

Generally speaking, saline agglutinins appear to be less harmful to the foetus, whilst albumin agglutinins usually carry a worse prognosis. There is, in fact, a tendency to discount the importance of saline agglutinins and to attribute haemolytic disease to the more important albumin agglutinins.

Antigen D has a corresponding anti-serum (anti-D); similarly antigen C has anti-C serum and antigen E has anti-E serum. More often these occur as mixed sera, such as anti-C and anti-D. Mixed saline and albumin agglutinating antisera frequently occur. Pure anti-D sera are essential for the Rh testing of females otherwise, e.g., Cde women might be called Rh-positive. Anti-c sera are rarely found and anti-d and anti-e are almost unknown.

RH TESTING

It is now taken for granted that the Rh status of every pregnant woman should be known. Facilities for Rh testing are so freely available that an unexpected case of haemolytic disease of the newborn or sensitization of an Rh-negative woman by Rh positive blood must be considered a reflection on ordinary standards of antenatal supervision. Fifty per cent of Rh-negative females who receive Rh-positive blood by any route become sensitized and may never bear even one living child. Less than 1 c.c. of Rh incompatible blood may be sufficient to sensitize. Where a woman's Rh status is unknown, she should be given serum or other parenteral fluids as an emergency until the necessary investigations can be carried out. Alternatively, Rh-negative blood may be given if available. In particular, a woman of unknown Rh status should not be transfused with blood from her husband or children, and similarly a daughter should not receive blood from either of her parents, unless tests have shown that there is no Rh incompatibility. It is possible for an Rh-negative daughter to result from heterozygous Rh-positive parents.

THE RH SET-UP

Many practitioners hold the erroneous opinion that it is not necessary to test a woman during her first pregnancy because they believe that a first pregnancy invariably proceeds to a successful termination as far as Rh sensitization is concerned.

This attitude is dangerous from two points of view. It is true that where an Rh-negative woman has never received Rh-positive blood by any route the first pregnancy usually ends favourably but this is not always the case. Our records show that patients have become sensitized during their first pregnancy and the most exhaustive enquiries have failed to reveal any other source of Rh sensitization. The other danger is the ever-present possibility that the patient may need an urgent transfusion and that Rh-positive blood may be given, usually with tragic results as far as future pregnancies are concerned.

Where ante-natal investigations show that the woman's blood is Rh-negative (D-negative), the husband's blood should be investigated. In the first instance it is sufficient to ascertain whether he possesses any of the antigens D, C or E. Except in special cases the question whether he is homo- or heterozygous is relatively unimportant. At best it is an intelligent guess; and the sera anti-c and anti-e are so rare that their use should be reserved for those cases where the woman has produced antibodies or where the obstetric history requires a decision about future pregnancies. Family studies will frequently give the desired information with certainty and without the use of rare sera. Surviving children should be investigated, followed by the examination of the husband's parents, if necessary.

Where the Rh set-up is liable to result in sensitization, it is necessary to examine the mother's blood throughout pregnancy for the production of antibodies. This applies both to the first and the subsequent pregnancies. At the same time, it is undesirable to overdo these investigations. After the first examination (which should take place as early as possible in pregnancy) it is sufficient to carry out examinations at 24, 30, 33, 36 and 38 weeks. The results of antibody titrations should not be taken literally or as an infallible guide to prognosis. A rising titre does not always mean a worse prognosis. A falling titre, or the disappearance of saline agglutinins, is frequently a bad sign which indicates the conversion from saline to albumin agglutinins and, most important, the action of low-titre antibodies over a number of months often produces a worse result than that of high-titre antibodies active for a short while. Even more puzzling is the fact that a rising titre can occur in cases where the infant proves to be normal and Rh-negative (anamnestic reaction).

Unless the appearance of antibodies indicates some form of active interference, the pregnancy should be allowed to proceed to term and, immediately after delivery, a specimen of cord blood should be

investigated. It must be emphasized that examination of the baby's blood is more important and more informative than an examination of blood from the mother. A positive direct Coombs' test may be taken as almost certain evidence of haemolytic disease and this, in conjunction with the cord haemoglobin, will indicate the best treatment to be adopted. Ideally a tube of clotted blood, an oxalate (blood count) tube and films should be examined without delay. The important information consists of:

1. The Rh set-up;
2. Direct Coombs' Test;
3. Haemoglobin;
4. Nucleated red cells;
7. Serum bilirubin.

Mollison and Cutbush [3] lay most store on the cord blood haemoglobin as an index of the severity of the case. They emphasize that unless some standardization of the degree of severity is aimed at, statistics regarding the efficacy of methods of treatment in different parts of the world, and in different Institutions, will be of little value for comparative purposes.

ABO SENSITIZATION

The importance of ABO group incompatibility in maternal sensitization is controversial. It is, of course, difficult to prove conclusively but occasional cases are so convincing that there can now be no doubt of the existence of this small but definite risk. Usually the woman belongs to Group O and produces an abnormally high anti-A agglutinin of an immune nature. Complications during the first pregnancy and abortions during the first trimester are probably more common than in the case of Rh incompatibility. Where husband and wife are incompatible in the ABO system we invariably titrate the appropriate agglutinin.

SENSITIZATION OF NATIVES

Since only 5% of the Bantu are Rh-negative, the incidence of sensitization due to the classical Rh set-up is, as one would expect, lower than in Europeans. It is our experience that Natives tend to react in an irregular manner due to differences in their Rh antigenic make-up. Wiener and Wexler [4] have also observed this among negroes in America and consider Rh sensitization is rare and that ABO sensitization is more common among them. In 1947 the author reported three Rh cases in Johannesburg [5] and has since encountered five more.

PROPHYLAXIS

The only real solution to the Rh problem is to find some means of either preventing or controlling the formation of maternal antibodies or to produce some product for parenteral administration which will neutralize or reduce the titre of the antibodies *in vivo*. This is a unique immunological problem. Carter [6] claimed that it was possible to produce an Rh 'hapten' from Rh-positive red cells which she used both to neutralize the maternal antibodies and to treat the affected infant. These findings have not been confirmed and some critical opinions have appeared. We have attempted to reproduce her results without success and personal communications from other workers in this field abroad have confirmed our findings. Ultimately, no doubt, some form of Rh 'group substance' will provide the answer but premature and unfounded reports in the lay press are to be deprecated.

Another line of approach is the so-called 'competition of antigens'. It is well known that haemolytic disease of the newborn is more common where the mother and foetus are compatible on the ABO system than where they are incompatible, the theory being that the A and B group substances are better antigens than the Rh substance, with the result that the mother produces immune antibodies to A and B rather than Rh. Wiener [7] has discussed the immunization of pregnant Rh-negative women with typhoid and pertussis antigens. For some years we also have worked on these lines but have preferred antigens such as diphtheria and tetanus toxoids, which are more readily standardized, and the response to which can be titrated with accuracy both in the maternal serum and the cord blood. An increasing number of women is being subjected by us to this form of prophylaxis. Not only may it throw some light on the problem in hand, but it should also afford information on the comparative antitoxic values in maternal and cord blood, a problem in which many gaps in our knowledge require to be filled.

We have also carried out experiments in animals on the possible value of yellow fever immunization as a means of counteracting the Rh response, but the results have been inconclusive, and we have encountered a number of cases of haemolytic disease of the newborn in which the mother had been immunized against yellow fever before air travel. Yellow fever vaccine is almost the perfect vaccine in that one injection produces a high degree of immunity in the majority of subjects, but one should be cautious in the use of living virus vaccines during pregnancy because of possibly producing congenital defects such as are known to occur after rubella. Vaccination at the end of the second trimester should be free from risk but much work remains to be done.

It is a moot point whether it should be permitted to vaccinate pregnant women during the first trimester with living virus vaccines, such as yellow fever, in order that they may comply with air travel regulations.

Where the husband and wife are compatible on the ABO system we are also trying to produce the equivalent of a mother-foetus incompatibility by injecting the mother with the appropriate group substance. For example, where the husband and wife both belong to group A we inject the mother with B group substance; she responds by producing increased anti-B just as if the foetus had belonged to group B and was providing the stimulus. In this way it is hoped to lower the incidence and the severity of the disease to the level at which it is found where the mother and foetus are incompatible on the ABO system.

At the moment, then, it can be said that no proved method exists to prevent the formation of Rh antibodies or to neutralize the effects of those which are being produced. The methods outlined above, however, may have some beneficial effect but the numbers treated are still too small to warrant any conclusions being drawn.

MANAGEMENT OF THE WOMAN AT RISK

It should be remembered that the knowledge that there is a risk and, in some cases, a reasonable certainty of complications due to the Rh factor, makes the pregnancy a very anxious one for these women. This aspect requires very considerable attention during the ante-natal period. For the last two years we have conducted a clinic to which patients are referred by their doctors. Where there is a risk of sensitization these patients are seen at intervals and the necessary tests and prophylactic measures are carried out. One has the impression that this additional attention has a considerable influence on the confidence and outlook of these patients.

The investigations should be so planned that tentative conclusions can be drawn by the 33rd week and by the 35th week it is essential that the serologist should recommend a course of action which his experience suggests as most hopeful of success in a notoriously unpredictable condition. Some paediatricians are averse to any form of interference and would allow the pregnancy to continue to term. They believe that premature induction of labour tends to increase the risk of kernicterus. Others, certainly the majority of obstetricians and serologists, prefer some form of action at about 36 weeks provided the baby is big enough to obviate the additional risk of prematurity; whether it takes the form of premature induction or caesarean section depends largely on the obstetrician. The advantages and disadvantages of each are evident and need not be dealt with here.

TREATMENT OF THE AFFECTED INFANT

As pointed out by Mollison and Cutbush,[3] the cord haemoglobin is the most reliable index of the severity of the condition. In their series no infant with a cord haemoglobin of more than 14 gm. % died. In our opinion no treatment is complete unless it is conducted by a team consisting of the serologist, obstetrician, transfusion operator and paediatrician. The key member of this team is undoubtedly the paediatrician just as the physician is obviously the key member of the team dealing with a case of haemolytic disease in an adult. The serologist will have followed up the case throughout the pregnancy and will have advised on the best treatment from the serological point of view; most serologists have a panel of Rh-negative donors for emergencies and can, if necessary, supply blood for the use of the person carrying out the transfusion. Such person may, of course, be an operator attached to a transfusion service, a house officer or a practitioner in the hospital of a country town. To the paediatrician, however, will fall the difficult task of tiding the infant over the stormy period which so often accompanies this condition. Apart from a daily blood count by the serologist there is little that the other members of the team can do once the transfusion has been given. When laboratory facilities are not available a daily haemoglobin estimation is adequate.

Results of treatment in South Africa have been reported by the author on 35 cases [8] and by Shapiro [9] on exchange transfusion in six cases. Exchange transfusion is gaining favour in dealing with selected cases of haemolytic disease but there is as yet insufficient evidence that it should be adopted as a routine. Mollison and Cutbush [10] emphasize that it is not a trivial procedure and should be reserved for cases where a single transfusion of Rh-negative blood is not likely to suffice. Pennell [11] draws attention to the many unsatisfactory features and possible dangers of exchange transfusion and prefers to give a simple transfusion of 50-60 c.c. of sedimented red cells, the amount of plasma transfused being reduced to the minimum. In a series of 28 cases treated by him the survival rate reached the remarkably high figure of 89.3%.

The renewed doubts about the best method of treatment emphasizes the importance of a scientific classification of cases based on cord haemoglobin, blood count and serum bilirubin. Survival rates following simple transfusions are not significantly inferior when compared with exchange transfusion survival rates of 76% in Mollison's series of 30 cases, 75% in Wiener's and Wexler's series of 28 cases [12] and 76% in Diamond's series of 85 cases.[13] Time is necessary to compare the final outcome and to decide on the best transfusion technique. At the moment it is a problem requiring further investigation.

From the practical point of view exchange transfusion is convenient and is not more difficult than simple transfusion, but is more time consuming and tedious. Unless the umbilical vein is used, the technique consists in cutting down on the appropriate vein. Wiener cuts the radial artery for removing blood and replaces via the saphenous vein. Diamond recommends the umbilical vein for both the removal and replacement of blood and Arnold and Alford prefer to cut down on the great saphenous vein, a polythene catheter being passed up into the inferior vena cava. It is somewhat chastening to recall that this 'new' technique of exchange transfusion was first practised and described in Canada about 25 years ago [14] in the treatment of a case of icterus gravis neonatorum. Forgotten for a quarter of a century, it was rediscovered as the result of renewed interest in the problem of transfusion in haemolytic disease.

ADVICE TO PATIENTS

This is one of the most difficult aspects of the Rh problem and one which affects the practitioner closely. A definite, unequivocal opinion is expected by the patient and should usually be possible if formulated on the following lines:—

1. *Premarital Blood Investigations.* Although it is desirable that the Rh status of every female should be known, much ill-advised publicity in the lay press has created a feeling of very real anxiety in the minds of many young people and premarital blood investigations are now frequently asked for. Rh incompatibility should never be a bar to marriage and very definite reassurance should always be given on this point; only 26% of women at risk do become sensitized and provided incompatible Rh transfusions are avoided the chances of one, two or more normal children are usually excellent. It is also well known that Rh incompatibility is not concerned in the aetiology of abortions during the

first three months of pregnancy, or as a factor in sterility.

2. Until a woman has become sensitized as indicated by the production of antibodies or the birth of an affected infant, she should be given a good prognosis. An Rh-negative baby also does not sensitize and consequently does not affect the outlook adversely.

3. Once antibodies have been produced and an affected infant delivered, the advice to be given becomes more difficult as personal, religious and other factors play a part. When the couple has one or more children and is not desperately keen to have another child, it is wise to advise against further pregnancies. Where, however, the husband has been found by family studies or other tests to be heterozygous Rh-positive, there is a 50% chance of producing an Rh-negative and consequently unaffected infant, and many couples are prepared to take this risk.

4. When the obstetric history is bad, with possibly one spastic mental defect surviving, and the husband probably homozygous Rh-positive, there should be no hesitation whatever in advising that further pregnancies are contra-indicated; every successive Rh-positive foetus will almost certainly be more seriously affected than those before. Unfortunately, despite advice, these women frequently do become pregnant and then the problems of therapeutic termination and even sterilization arise. Such purely personal problems must be settled by the patients, the practitioner and the specialist. They can be extremely difficult, especially when religious scruples enter into the problem and since there are few, if any, disastrous congenital defects which can be prophesied with such certainty, it is time that the religious and ethical aspects of this problem received serious consideration. If many obstetricians consider termination of pregnancy justified where the mother has contracted rubella during the first trimester because of the risk of congenital defects in the foetus, the case for interference in Rh-sensitized mothers with a bad obstetric history must be considered overwhelming.

THE FUTURE

New antigens and antibodies are being discovered from time to time and these are constantly increasing our knowledge of genetics, the blood groups, immunity and blood diseases in general. Foetal deaths from blood group incompatibility will, however, remain at the present level and the mortality rate from haemolytic disease of the newborn may show a further small decrease as the result of advances in treatment, but will then remain stationary until efficient prophylactic measures and specific methods of treatment are evolved. This aspect of the problem is receiving increasing attention, and the results will no doubt in due course set the seal on the achievements of the last 10 years in the field of the relationship between blood factors and haemolytic disease.

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Q FEVER

SEROLOGICAL EVIDENCE OF THE OCCURRENCE OF ANOTHER CASE IN SOUTH AFRICA

D. L. RANKING, M.B., CH.B.
Ladysmith

This case is reported to record a further case of Q Fever in South Africa.[1]

The patient, a European male aged 24 years, employed as an electrician at a dairy-product factory, was admitted to the Ladysmith Provincial Hospital on 19 July 1950 as a suspected case of enteric fever.

He stated that he had been quite well until 12 July 1950 when he had a shivering attack with general malaise, sore eyes, and a slight headache. On the advice of his doctor he had been in bed for a week before admission to hospital on 19 July.

He was a young adult male, who looked pale and ill. His temperature was 103° F, and the pulse rate 92 per minute. The tongue was dry and furred, and he complained of a slight headache. There was no rash.

Chest. No impairment of percussion note was found; there were no adventitious sounds.

Heart. Pulse 92 per minute, regular. The heart was not enlarged, and the heart sounds were normal.

Abdomen. There was no tenderness or splenomegaly, and the liver was not enlarged.

The patient admitted that he had been drinking unboiled milk at the milk factory over a period of months. Although he was mentally alert, a tentative diagnosis of enteric fever was made and the following investigations were done.

White Blood Count (*20 July*): 6,550 per c.mm.; Band forms, 5%; Polynuclears, 62%; Lymphocytes, 25%; Monocytes, 6%; Eosinophils, 0% Basophils, 0%.

Urine (*21 July*): Amber-coloured. S.G. 1016. Contained no albumin or sugar; Deposit of scanty cellular debris.

Widal Reaction (*22 July*): *S. typhosa*: O antigen, 1:80; H antigen, negative.

The temperature became normal on the third day and remained normal for three days (Fig. 1). This cast some doubt on the diagnosis of enteric fever.

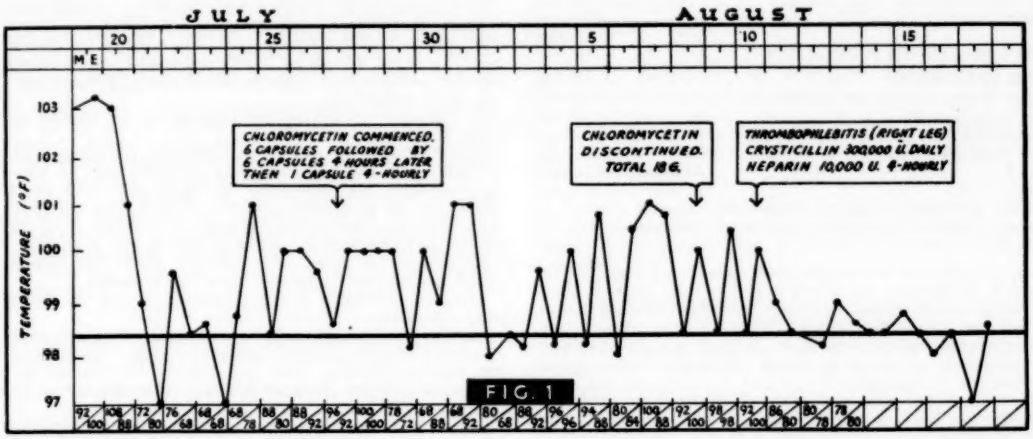

FIG. 1

Blood Culture (24 *July*): Sterile after four days' incubation.

Stool (*24 July*): No pathogenic organisms were isolated.

On 24 July the temperature went up to 101° F and he again began to look ill.

Blood Smear (*25 July*): No animal parasites were observed.

X-ray of the Chest (*27 July*): No evidence of pulmonary pathology noted.

Widal and Weil Felix (*28 July*): The serum agglutinated the following organisms to the titre shown:

Widal: O antigen, 1:80; H antigen, negative.

Weil Felix: OX19, 1:100; OXK, 1:100; OX2, 1:100.

The patient was now running an intermittent temperature between 98°-101° F (Fig. 1) and he began to complain of very tender glands in the right groin. A further blood culture was done for typhoid organisms as well as a culture and agglutination test for *B. abortus* and *B. melitensis*, all of which were negative.

It was now thought that he might be suffering from Q fever because he did not appear ill enough to be suffering from enteric fever. Blood was sent for a Rickettsial Complement Fixation test.

Chloromycetin was commenced on 27 July. Six capsules were given, followed by six capsules after six hours and then one each four hours for 12 days.

A gland was removed from the right groin and sent for histological examination.

The response to Chloromycetin was disappointing, for the patient continued to run an intermittent temperature. A total of 18 grammes was given over a period of 12 days.

Histology of the Lymph Node (*8 August*): There is hyperplasia of the cells lining the sinuses with extensive fibrosis round the gland. The features are those of chronic inflammatory reaction, sinus catarrh. There is no evidence of Hodgkin's disease.

The report of the Weil Felix and Complement Fixation tests read as follows:

Weil Felix Test:

Antigen	*End titre*
Proteus OX19	Negative
Proteus OX2	Negative
Proteus OXK	Negative
Complement Fixation Tests:	
R. prowazeki (epidemic typhus)	Negative
R. mooseri (murine typhus)	Negative
R. reckettsi (tick-bite fever)	Negative
R. akari (rickettsial pox)	Negative
R. burneti (Q fever)	1:100 plus

This indicates that the patient had Q fever. The end titre of complement fixation was not determined but it was higher than 1:100.

On 9 August the patient developed a thrombophlebitis of the right leg and Crysticillin 300,000 units daily was given with Heparin 10,000 units intravenously every four hours.

On 13 August the swelling of the right leg had subsided and the patient was feeling much better.

His recovery was uneventful.

COMMENT

The serological findings in this case are strong evidence that this patient had Q Fever, which was probably contracted from drinking infected milk.

It is interesting to note the poor response to Chloromycetin in this case, for which no explanation can be given.

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NEW PREPARATIONS AND APPLIANCES

DELMOR NUTRIENT POWDER

As a result of the increased interest in oral protein therapy, the Medical Research Division of Sharp & Dohme has developed *Delmor* Nutrient Powder, a palatable, pleasantly-flavoured protein concentrate with minerals, vitamins and whole liver substance.

Each 100 gm. contains:

Protein (Nx 6.25 derived from casein, lactalbumin and soybean)	50 gm.
Carbohydrate	20 gm.
Calcium	600 mg.
Phosphorus	440 mg.
Iron	15 mg.
Thiamine hydrochloride (Vitamin B_1)	10 mg.
Riboflavin (Vitamin B_2)	10 mg.
Pyridoxine hydrochloride (Vitamin B_6)	1 mg.
Calcium pantothenate	5 mg.
Niacinamide	100 mg.
Ascorbic Acid (Vitamin C)	100 mg.
Vitamin A	4,000 U.S.P. units
Vitamin D	400 U.S.P. units
Whole liver substance (together with other natural factors of vitamin B-complex, including vitamin B_{12})	1 gm.

Delmor provides all the amino acids considered essential for maintenance of nitrogen equilibrium and normal growth, since for the purposes of tissue synthesis, all the essential amino acids must be available at approximately the same time. Sufficient carbohydrate is present in *Delmor* to permit utilization of the amino acids for synthesis of tissue protein rather than production of energy.

Protein Utilization. The inclusion of whole liver substance provides the 'animal protein factor', a new vitamin factor found in liver and variously known as physin, 'animal protein factor' and zoopherin. The most striking characteristic of this factor is its effect on protein utilization as shown by improvement in the rate of growth and an increase in voluntary food intake. Furthermore, the vitamin B_{12} content of liver has also been shown to have protein utilization activity, and may be closely related to the animal protein factor.

Clinical Indications. Delmor is indicated for the treatment of protein deprivation states and subclinical deficiency states due to surgery, burns, infections, convalescence and chronic disease, peptic ulcer, pancreatitis and ulcerative colitis, pregnancy and lactation, oedema and old age.

Dosage. One to two tablespoonfuls three or four times daily or more as required. *Delmor* is palatable and may be added to milk, chocolate pudding, custards, etc. *Delmor* forms a finely divided suspension when added to liquids and does not settle out readily.

Delmor Nutrient Powder is supplied in 1-lb. jars.

* * * *

SULFAMYLON HYDROCHLORIDE (1% SOLUTION)
TREATMENT OF UPPER RESPIRATORY AND OCULAR INFECTIONS

Description: The preparation is 4-aminomethylbenzene-sulphonamide hydrochloride, a white crystalline powder, freely soluble in water, with a molecular weight of 222.67 and a melting point of 260°-265° C. Unlike most other sulphonamides, Sulfamylon is not inhibited by para-aminobenzoic acid.

Action: Bactericidal for a wide range of bacteria including various gram-negative and gram-positive organisms found in infected wounds. Also effective against the anaerobes which cause gas gangrene. Active in the presence of pus and blood, and should not be adversely affected by changes in the acidity of the environment. Prompt in action, and relatively non-toxic to cellular tissue.

Indications: For topical chemotherapy of upper respiratory infections (e.g. rhinitis, sinusitis, tonsillitis, etc.) and ocular infections.

Upper Respiratory Infections: Free instillation by the Proetz technique, irrigation and atomizer spray. Local application to the pharynx and tonsils is also effective.

Ocular Infections: Instillation, irrigation and wet dressings.

How Supplied: Bottles of 30 c.c. (1 fl. oz.) and 236 c.c. (8 fl. oz.). Sulfamylon, trademark reg. U.S. Pat. Off.

VERENIGINGSNUUS : ASSOCIATION NEWS

NATAL COASTAL BRANCH: CLINICAL MEETING, 23 AUGUST 1950

Dr. Renton (President) was in the Chair and approximately 45 members were present. Clinical cases with charts and explanatory notes were shown before the commencement of the meeting:

1. *? Actinomycosis of the Left Maxilla.* African male aged 60 years.

2. *Toe-nail—Bed Infection.* African male aged 8 years. Spirochaetes and fusiform bacilli present; successfully treated with Aureomycin ointment.

3. *Tetanus* in an African male aged 15. Quick response to a single large dose (180,000 units) of A.T.S.

4. *Abdominal Pack* to control bleeding in an Indian female aged 35 years following a left salpingo-oophorectomy (tubo-ovarian abscess) and right salpingectomy (pyosalpinx) (patient and pack exhibited).

5. *Tubercle* of the retinal choroid in an Indian female of 8 years.

The President, in well-chosen phrases, said how glad he was to visit again the McCord Zulu Hospital and he was sure of an interesting and instructive evening. He then handed over charge of the proceedings to Dr. Alan Taylor, Medical Superintendent, who welcomed the members of the Association and stated the difficulties involved in putting on a clinical meeting with a show of cases at a distance from the Hospital. He called on doctors connected with the Hospital.

Unusual Intestinal Obstructions Occurring in the Hospital were reported.

(a) *Dr. Reddy* reported on one case of truction in the ascending colon caused by round worms. He showed X-rays for this and another case reported by Dr. Taylor in 1949 in the *South African Medical Journal*. The diagnostic point was multiple filling defects after a barium enema.

Dr. Bismillah reported two cases of non-specific string adhesions involving the ileum and ileo-caecal junction, one following an appendix operation and another with no previous history to account for the offending lesion. He reported a third case in which the cause of the obstruction was presumably an old amoebic ulceration.

Two cases of obstruction following tuberculous adhesions were reported—one by Dr. Bismillah, of a case in which some six constrictions were found in the ileum; one so marked as to cause complete obstruction. Others were less marked but showed the same characteristics of scar tissue formation in the wall of the bowel completely encircling it. The mesentery was filled with glands, apparently tuberculous. There were no ulcerations in the mucous surfaces of the bowel, no tubercles studding the peritoneum.

Dr. Taylor reported for *Dr. Stafford Mayer* a case considered by the pathologist to be tuberculous and in which at first a colectomy was done involving the removal of the caecum, ascending and first portion of the transverse colon. At this time lesions of a similar nature were noted near the splenic flexure and near the end of the descending colon. Subsequently the rest of the transverse colon and the descending colon were removed. The patient had made an uneventful recovery. There was no discussion on this case.

Dr. Hendrickse reported in some detail on an epidemic experienced at the McCord Hospital. It was at its height in May. He described 30 cases submitted to operation in which all but four had demonstrable signs of mastoid infection. He showed: (a) the absence of classical symptoms; (b) the beneficial effect of operation; (c) what appeared the indication for such wholesale surgery.

Considerable discussion followed, in which other E.N.T. specialists, drawing on their own experience, questioned whether myringotomies might not have been used more extensively as a preliminary to mastoidectomies.

Abdominal Packs. Their use as haemostatic agents was reported by *Dr. Mayat* and discussed by *Dr. Gilbey* and *Dr. Renton*. It had been noted that packs such as these are extremely useful in controlling haemorrhage following salpingectomies and 'old' ectopics. There seemed to be no contraindication to their uses.

Thorns in the Foot. Two cases were discussed by *Dr. Gumede* showing the effect of thorns entering the sole of the foot. The history was that of a long-standing, low grade inflammation, ultimately culminating in sinuses on the dorsum of the foot. Such cases gave an X-ray picture in which one

of the tarsal or metatarsal bones showed a round area of rarefaction. Both cases had been treated unsuccessfully in other hospitals, presumably without the aid of X-rays. The operative procedure consisted of cutting down on the dorsum and removing the thorn which lay loosely in the decalcified area.

Amoebic Liver Abscesses in Infants. Dr. Lasbrey reported on seven such cases of under 20 months of age, giving pertinent facts in connexion with each case. It appeared from her presentation that such abscesses might be commoner than suspected. Discussion between members present revealed that this series showed a frequency not experienced elsewhere.

Hydramnios. Dr. Ntshona reported on a case of acute hydramnios which had been relieved by suprapubic aspiration of 16 oz., enabling the woman to carry on from 33 to 40 weeks with the ultimate birth of a healthy infant. It was stressed in the discussions that followed that such a procedure was probably useful as a means to enable certain cases to carry on to full term.

A Case of Tetanus. Dr. Gearing reported on a case of tetanus in which on admission the patient was having 134 spasms every 12 hours. Tetanus antitoxin (160,000 units) was given on admission. The patient was heavily sedated. By the 11th day, the spasms had ceased.

The President, on behalf of the meeting, very heartily congratulated *Dr. Taylor* on the excellent manner in which so many valuably informative cases had been presented, many by young non-European doctors. He also warmly thanked *Dr. Taylor* and his staff for a very fine evening and such generous hospitality.

JOINT MEETING, BRITISH MEDICAL ASSOCIATION AND MEDICAL ASSOCIATION OF SOUTH AFRICA

JOHANNESBURG—JULY 1951

Members are reminded that the Joint Meeting of the B.M.A. and the M.A.S.A. will be held in Johannesburg from 16-21 July 1951. A circular giving an outline of the scientific meetings and the non-scientific functions will be issued early in the new year; but in the meantime those who propose to attend the Meeting are urged to notify Congress Office immediately in order that arrangements for special entertainments may be planned.

H. Moross,
General Secretary.

Congress Office,
5 Esselen St., Johannesburg.
8 November 1950.

GESAMENTLIKE VERGADERING, BRITSE MEDIESE VERENIGING EN MEDIESE VERENIGING VAN SUID-AFRIKA

JOHANNESBURG—JULIE 1951

Lede word daaraan herinner dat die Gesamentlike Vergadering van die B.M.V. en die M.V.S.A. in Johannesburg gehou word vanaf 16-21 Julie 1951. 'n Sirkulêre, aantonende in hooftrekke die wetenskaplike vergaderings en nie-wetenskaplike funksies wat gereël word, sal vroeg in die nuwe jaar uitgereik word. In die tussentyd egter word die wie van voorneme is om die Vergadering by te woon aangeraai om die Kongreskantoor dadelik in kennis te stel sodat reëlings vir spesiale onthale getref kan word.

H. Moross,
Algemene Sekretaris.

Kongreskantoor,
Esselenstraat 5, Johannesburg.
8 November 1950.

PASSING EVENTS

WORLD MEDICAL ASSOCIATION

The World Medical Association has unanimously elected Dr. Dag Knutson of Djursholm, Sweden, as president for 1950-51. Physicians from Switzerland and Spain were also elected to official positions in the voting at the Association's fourth general assembly.

The Association, which has a membership of nearly 500,000 physicians in 39 countries, selected Stockholm as the site for the fifth general assembly to be held on 15-20 September 1951. Athens was chosen as the meeting place for 1952.

Dr. Otto Leuch of Switzerland was re-elected Treasurer. Council members elected are: Dr. L. Garcia Tornel (Spain), Dr. J. A. Bustamente (Cuba), Dr. S. C. Sen (India) and Dr. R. L. Sensenich (United States).

Dr. Knutson succeeds Dr. Elmer L. Henderson, President of the American Medical Association. Dr. Knutson will take office at the Stockholm meeting. He is President of the Board of the Swedish Medical Association. A specialist in internal disease, he is head of the University polyclinic for internal disease at Karolinska Sjukhuset, Stockholm.

* * * *

To Dr. and Mrs. G. E. Joubert (*née* Gertruida Louw), of Ceres, a son on 14 November 1950 at the Gilmour Nursing Home.

* * * *

Dr. A. C. Boonzaier, of Schweizer Reineke, has left for England for post-graduate studies.

* * * *

Dr. R. A. Trope has joined Dr. H. Kaye at Medical Centre, Jeppe Street, Johannesburg, as a specialist ophthalmologist. Telephone: 22-5454.

* * * *

Dr. Nathan Finn's appointment to the Warmbaths Non-Acute Hospital Board has been extended by the Administrator-in-Executive Committee for a period of three years from 1 December 1950.

TENTH INTERNATIONAL CONGRESS ON INDUSTRIAL HYGIENE AND MEDICINE

This International Congress will be held in Lisbon from 9 to 15 September 1951 under the auspices of the Permanent International Committee of Industrial Medicine.

The Permanent International Committee of Industrial Medicine was founded in Milan in June 1906 with the object of holding international congresses at regular intervals. Two World Wars have had much to do with keeping down the number of congresses held in the 44 years of the International Committee's existence. The last congress was held in London in 1948.

The International Committee consists of members in each country originally selected on account of their prominence and interest in industrial medicine. The Constitution provides that further membership shall be selected in each country by the persons at the time in effective membership. The South African members at present are Dr. J. H. G. van Blommestein and Dr. A. J. Orenstein.

The officers of the International Committee are:
President: T. E. A. Stowell, M.D., F.R.C.S. (London).
Vice-Presidents: Prof. P. Mazel (France), Dr. R. R. Sayers (U.S.A.) and Dr. A. J. Orenstein (South Africa). *General Secretary*: Prof. L. Carozzi, Geneva.

The official languages are practically all the important European ones, i.e. English, German, French and Spanish.

Anyone who contemplates attending the next congress can obtain detailed information from Dr. A. J. Orenstein, P.O. Box 1056, Johannesburg.

NUFFIELD DOMINION TRAVELLING FELLOW: DR. J. H. LOUW

Dr. J. H. Louw was recently awarded a Nuffield Dominion Travelling Fellowship. He is 35 years old and graduated as M.B., Ch.B. at the University of Cape Town in December 1938. In the following year he acted as House Surgeon to Professor Saint and as House Physician to Professor Brock. After having been in general practice in 1940, he entered the South African Medical Corps in 1941 and served in the Army till 1945. During this time he spent two years in the Middle East. In December 1946 he received the Ch.M of the University of Cape Town, with honours, the subject of his thesis being *The Morphology of the Main Bile Ducts with Special Reference to their Musculature.*

He was appointed to the honorary staff of the Groote Schuur Hospital in June 1945 and has been Honorary Assistant Surgeon in the Professorial Unit since July 1946. He was also on the teaching staff of the University of Cape Town from June 1945 and was Assistant to the Professor of Surgery from February 1947.

Dr. Louw's research work has been done mainly on the

subject of his Ch.M. thesis. A portion of this work has been incorporated by Professor Drennan in the revised section on the *Biliary Tract* in the latest edition of Cunningham's *Textbook of Anatomy*.

Under the title *The Extra-Hepatic Biliary System: Its Phylogeny*, some of Dr. Louw's researches were published in *Clinical Proceedings*, 1949, Vol. 8, p. 185. This paper attracted considerable attention in Great Britain as well as the United States, Canada and South America and an editorial on it appeared in *Gastro-Enterology*. It was also summarized in the *1950 Year Book of General Medicine*. Other publications by Dr. Louw include articles on Desert Sores, Tuberculous Epididymitis in Childhood, Acute Intestinal Obstruction and Intussusception.

Dr. Louw has displayed a special interest in paediatric surgery, particularly in congenital anomalies of the alimentary tract. He has had considerable opportunities for this work at Groote Schuur Hospital where he has been in charge of the Children's Surgical Wards from the beginning of this year.

He was awarded the Nuffield Scholarship to further his studies in paediatric surgery with emphasis on research into the anomalies of the alimentary tract.

Dr. Louw, who will be attached to the Hospital for Sick Children, Great Ormond Street, London (under Mr. Denis Browne) will be away from 26 January 1951 until the end of that year. During his stay overseas he will take the opportunity of studying the practice and teaching of surgery in general.

REVIEWS OF BOOKS

Essential Urology

Essential Urology. By Fletcher H. Colby, M.D. (Pp 580 + x with 342 figures. 61s. 6d.) London: Baillière, Tindall & Cox. 1950.

Contents: *Part I*: Embryology, Anatomy and Physiology of the Genito-Urinary Organs. 1. Development of the Kidneys and Ureters. 2. Physiology of the Kidney. 3. The Ureters. 4. The Bladder. 5. The Penis. 6. The Male Urethra. 7. The Female Urethra. 8. The Prostate. 9. The Testis and Epididymis. 10. The Seminal Vesicles. 11. The Scrotum. *Part II*: Examination of the Urological Patient. 12. Methods of Examination. *Part III*: Diseases of the Genito-Urinary Organs. 13. Diseases of the Kidney. 14. Diseases of the Ureter. 15. Diseases of the Bladder. 16. Diseases of the Prostate. 17. Diseases of the Seminal Vesicles 18. Diseases of the Male Urethra. 19. Diseases of the Female Urethra. 20. Diseases of the Penis. 21. Diseases of the Scrotum. 22. Diseases of the Testis. 23. Diseases of the Epididymis. 24. Male Sterility. 25. Tuberculosis of the Genito-Urinary Organs.

A large amount of urology is presented lucidly and concisely in this book 'intended mainly for students'; little emphasis has been laid on treatment except to outline 'accepted methods'.

Part I contains most of the main facts but it is disappointing to find the physiology of the kidney dismissed in less space than is devoted, further on, to necrotizing renal papillitis.

Part II includes a routine general surgical history form for urological note-taking; family insanity, epistaxis, drug addiction and dysphagia are all mentioned there yet such symptoms as thirst and pyuria and the palpation of the male urethra and prostatic lymphatics in routine examination are ignored.

Part III presents unnecessarily involved classifications of renal and testicular tumours quite unacceptable to most British pathologists. There are no indications for prostatectomy and the small fibrous gland merely merits five lines of text.

The chapter on tuberculosis is well written and stress is rightly laid on a pre- and post-operative sanatorium regime. This is more practicable in the 300-bedded hospital devoted solely to extra-pulmonary tuberculosis that is available in Massachusetts than in most other parts of the world. One notes that skin ureterostomies are preferable to transplants, that prostatic massage is advocated in suspected tubercle of that gland and that simple nephrectomy rather than nephro-ureterectomy is advocated for a tuberculous kidney—with all of which many modern urologists would disagree.

The rather large bibliography and multitudinous references appear out of place in a book of essentials intended mainly for students.

Despite the above criticisms and the rather dogmatic views suggested in certain sections, the book is very much up-to-date, well written and easy to read. Reproductions and illustrations are plentiful and of good quality. Among the smaller books on urology it will certainly gain a place of eminence and can be recommended for undergraduates (and postgraduates) who desire to obtain a good urological background.

Freud or Jung

Freud or Jung. By Edward Glover. (Pp. 207. 15s.). London: George Allen & Unwin Ltd. (South African Representative: Mr. Howard B. Timmins, Monarch House, 58-60, Long Street, Cape Town). 1950.

Contents: 1. Introductory. 2. Mental Structure. 3. Mental Energy. 4. Mental Mechanisms. 5. Character and Consciousness. 6. Dreams and Neuroses. 7. Individuation: the Jungian Odyssey. 8. Sociology, Politics and Alchemy. 9. Religion. 10. Art. 11. Conclusion: The Eclectic's Dilemma. Index.

The neurotic's disability is a profound misfunctioning which affects the whole structure of his personality. Freud's discovery of the unconscious mind has made it possible for psychotherapeutists to change this misfunctioning so that the neurotic's behaviour becomes more effective and adaptable. There have been many modifications of the Freudian theory, so that the neurotic may, if he prefers it, choose to be treated by an Adlerian, a Stekelian, a Jungian, a Rankian, a Kleinian or by an individual eclectic who has 'taken the best out of each system.'

Dr. Glover is an eminent and articulate Freudian. His object is to expose all psycho-analytical schismatics who have impeded psychological progress by watering down the Freudian concepts with irreconcilable formulations. In this book he directs his penetrating arrows at Jung who is one of the more spectacular schismatics, and shows that a reconciliation between Jung and Freud is impossible and undesirable. Jung has ignored Freud's apparently unpalatable discovery that sexuality develops and is active in the child at an early age. Jung confesses that he has no theory with which to explain dreams, and he has little to say on the subject of neurosis. He discards the most fundamental of Freud's discoveries and then proceeds to make use of Freudian concepts which he has himself rendered invalid. His reputation for mystic wisdom, for 'bringing the West closer to the immemorial and intuitive East' is in Dr. Glover's opinion largely the result of Jung's verbosity and the archaic, naïve and obscure symbolic forms which he uses to elucidate human functioning.

This book by its intelligence and breadth should chasten those who, while lacking in knowledge and scientific discipline, yet feel compelled to discredit Freud's remarkable psychological discoveries.

Aids to Materia Medica

Aids to Materia Medica. By G. H. Newns, M.D., M.R.C.P. (Pp. 204 + viii. 5s. 4th ed.) London: Baillière, Tindall & Cox. 1950.

Contents: 1. Materia Medica of Inorganic Substances. 2. Materia Medica of Organic Substances. 3. Lists of Preparations. 4. Classification of Drugs. 5. Weights and Measures. 6. Drugs having Doses less than one Grain. Index.

This book, as its title implies, does not claim to be anything more than a revision book for medical students. As such it fulfills its purpose excellently, though whether a student will learn much of the science of therapeutics from it is another matter. The modern student is sometimes inclined to forget that there is much medicine besides penicillin and the sulphonamides, and so it is refreshing to find these substances given no pride of place, though to place them in the category of antipyretics alongside the humble aspirin is perhaps overdoing it. There is no mention of any of the other antibiotics, or of chemotherapeutic substances such as the sulphones or para-amino-salicylic acid. Other omissions of substances which have probably come to stay, and which deserve a mention even in such a small book, are e.g., corticone and B.A.L.

CAUSES OF BLINDNESS

The Causes of Blindness in England and Wales. By Arnold Sorsby. (Medical Research Council Memorandum No. 24). (Pp. 42. 1s. 6d.) London: H.M. Stationery Office. 1950.

Contents: 1. Introduction: The Number of Blind Persons: Census Returns 1851-1911. 2. The Present Survey: Material: Methods. 3. Analysis of Blind Certificates: Blindness from the Same Cause in Both Eyes; Blindness from a Different Cause in the Two Eyes. 4. Discussion: The Present Blind Population; The Changing Background; The Causes of Blindness To-day; Problems and Prospects. Acknowledgments. References. Appendices.

As Research Professor of Ophthalmology of the Royal College of Surgeons and the Royal Eye Hospital, Professor Sorsby's contributions are well known. This survey is based on 19,149 certificates of blindness covering the years 1933-1943 and are representative of urban and rural areas.

Returns from the Liverpool School for Indigent Blind which was founded in 1791 showed that by 1891, two thirds of those seeking relief had lost their sight by smallpox. By the end of that century, smallpox had ceased to be the main cause and ophthalmia neonatorum led the field. The present survey shows that cataract (24.6%) is the main cause, with glaucoma (13.4%) second and myopia (10.8%) third while ophthalmia neonatorum lies ninth (2.6%).

The author states that the incidence of blindness rises sharply after 50 years of age and almost 40% of the blind population are concentrated in the group of 70 years.

Another conclusion is that the overall risk of blindness is substantially the same for both sexes. He considers the incidence of blindness to be about 250 per 100,000 persons, a figure in line with experience in Canada and the United States, while the incidence of blindness in children has declined to almost half in the 25 years between 1923-1948.

He concludes this instructive memorandum with a demand not only for more intensified administrative effort and more highly developed hospital facilities, but also for the creation of new knowledge.

PLASTIC SURGERY

Principles and Practice of Plastic Surgery. By Arthur Joseph Barsky, M.D., D.D.S. (Pp. 499 + xii, with 1,029 figures. 76s. 6d.) London: Baillière, Tindall & Cox. 1950.

Contents: 1. General Considerations. 2. Free Skin Grafts. 3. Flaps and Tube Pedicles. 4. Transplantation of Tissues other than Skin. 5. Wounds, Burns, Frost-Bite and their Treatment. 6. Scars and Keloids and their Treatment. 7. The Orbit. 8. The Nose. 9. The Ear. 10. Harelip and Cleft Palate. 11. Lips, Cheeks, and Jaws. 12. Fractures of Facial Bones. 13. The Neck and Trunk. 14. The Extremities. 15. The Hand. 16 Prostheses. Index.

This is an enlargement of the previous volume put out by the same author some years ago. The style is clear without being dogmatic and the principles are easily understood. It is well illustrated both photographically and diagramatically, and the author is to be congratulated on indicating his ideas with modesty and good taste. A number of outmoded ideas, however, are still included in this volume and newer methods which should have been mentioned are omitted.

The early chapters deal with general considerations, followed by descriptions of various types of skin grafts and transplantation of tissue other than skin. The author describes clearly the treatment of wounds, burns and frost bite. Although this chapter is short it covers the subject most adequately. Treatment of scars and keloids is illustrated clearly.

The orbit and the reconstructive processes relating thereto are very well shown. Plastic surgery of the nose is discussed fully although more emphasis is placed on aesthetic rather than on reconstructive techniques. The external ear and its deformities are well shown and most of the views on this difficult subject are discussed.

The chapter on cleft lip and palate is surprisingly weak; e.g., the modifications of Hagedorn's operation, universally accepted as most suitable for the repair of the lip, is not even mentioned.

The chapter on maxillo-facial surgery, on lips, cheeks and jaws, including fractures, shows little advancement on what was written a decade ago. In fact, one or two of the techniques indicated are clearly out-moded and should have been eliminated. One has the same impression on reading the section on surgery of the neck and trunk, for many of the methods advocated are old and have been improved on in recent years. This applies particularly to breast plastics. Anal plastic surgery, so important in the treatment of pruritus, chronic fissures, etc., has not been mentioned.

There is a full description of plastic surgery of the extremities, particularly that of the hand. A short chapter is also included on prostheses.

In general, this book is an excellent preliminary textbook for students interested in plastic surgery, although as a book of reference it falls short of the requirements of specialists in this subject.

SURGICAL AND MAXILLOFACIAL PROSTHESIS

Surgical and Maxillofacial Prosthesis. By Oscar Edward Beder. (Pp. 51 with 31 illustrations. $3.00.) New York: Columbia University Press. 1949.

Contents: 1. Introduction. 2. Splints. 3. Stents: Their Use in Intraoral Grafts of Skin or Mucous Membrane. 4. Protective Shields in Radiation Therapy. 5. Obturators. 6. Appliances to Correct Resected or Missing Portions of the Mandible 7. Extra-oral Impressions. 8. Somatoprostheses. 9. Cranial Prostheses.

This small volume will be of great value to dentists and dental mechanics who deal with problems relating to surgical and maxillo-facial prostheses. It covers the subject clearly, particularly those aspects connected with unusual and difficult cases.

Technique exercises in the Stout sectional splint are given, and also on the cast cap-splint. All materials necessary are tabulated, and step-by-step instructions are set out. The use of intra-oral moulds in the application of grafts is also shown. Instructions and exercises in the use thereof are carefully detailed.

One chapter is devoted to protective shields in radiation therapy and another to obturators. Here, too, a number of exercises are indicated in detail to show the use of various methods.

Prostheses for restoration of the mandible and maxilla form part of a chapter, and lastly external prostheses (such as the formation of latex noses and ears) are discussed.

ROENTGENOGRAPHIC POSITIONING

Atlas of Roentgenographic Positions (In Two Volumes). By V. Merrill. (Pp. 708, with 1.500 illustrations. £10 2s. 6d. per set.) St. Louis: The C. V. Mosby Company. 1949.

Contents: *Volume* 1: 1. Preliminary Steps in Roentgenography. 2. General Anatomy and Anatomical Terms. 3. Anatomy and Positioning of the Upper Extremity. 4. Anatomy and Positioning of the Lower Extremity. 5. Anatomy and Positioning of the Shoulder Girdle. 6. Anatomy and Positioning of the Bony Thorax (Sternum and Ribs). 7. Anatomy and Positioning of the Pelvic Girdle. 8. Anatomy and Positioning of the Spinal Column.
Volume 2: 9. Skull, Anatomy and Positioning. 10. Paranasal Sinuses. 11. Cerebral Pneumography. 12. Facial Bones. 13. The Mouth (Teeth and Salivary Glands). 14. The Neck (Soft Structures). 15. Body Cavities, Habitus, and Surface Markings of the Abdomen. 16. Thoracic Viscera. Respiratory System and Mediastinal Structures. 17. Digestive System. 18. Excretory System. 19. Female Reproductive System.

This atlas is presented in two volumes on excellent paper with first-class printing. Both volumes have hard covers and are intended and fulfil the function of reference books in any X-ray Department.

During the last 20 years the development of radiographic technique has proceded apace. The present volumes are an adequate demonstration of the development in the technical aspects of radiography. Both are extremely well done and cover a very wide field of information necessary in the production of good radiographs.

Each section is prefaced by a very satisfactory description with line drawings of the anatomical background to the particular section. The positioning is shown by photographs with a very adequate and clear description, as well as by excellent reproductions of the X-ray results obtained in these positions.

Each projection is adequately described, indicating the size of films required, the position of the parts in relation to the film and the direction of the central ray towards the anatomical points. Furthermore, there is an actual description of the parts demonstrated.

All credit must be given to the author for indicating, whereever possible, the origin and history of the development of each projection and the particular pioneers involved in these developments.

It must be noted that several of the projections described are apparently those used in America, which are somewhat different from the projections used in South Africa, e.g., oblique views of the spine taken in the erect position. Meticulous care is indicated in the degree of fixaton employed in the various radiographic manoeuvres.

There is also an extremely good glossary of medical terms and anatomical descriptions, which makes it very useful from the point of view of training radiographers. The volumes have been tried out in practice for some time and have proved extremely useful, from the point of view of teaching and reference.

Unfortunattely there are no settings attached to the various radiographs which have been taken although this cannot be regarded as a serious fault.

There is no doubt that this production is excellent in every way and should prove a source of information to radiographers as well as to radiologists. It is certain that these volumes are a necessity in every teaching department.

Autopsy Technique

Practical Post-mortem Technique: *A Handbook for the Student Post-mortem Technician*. By E. G. Poynter, R.M.P., S.E.A.N. (Pp. 118 with 42 figures. 9s.) London: Henry Kimpton. 1950.

Contents: 1. Surface Markings, Anatomy and Physiology. 2. Cleanliness, Deodorants, Protection, Instruments, Knife Sharpening. 3. Consents for Post-mortems, Post-mortem Technique, Opening the Body and Removal of Viscera. 4. Removal of the Internal Organs. 5. Adult Skull, Infant's Skull, Base of Skull. 6. Examination of Organs. 7. Specimens and Sections for Histology, Bacteriology, Bone Marrow Collection. 8. Restoration in Normal and Accident Cases. 9. Preservation of Bodies, Museum Specimens. 10. Medico-Legal Cases. 11. Plaster Casts, Post-mortem Records. Table of Average Weights and Sizes of Organs.

This little handbook on autopsy technique has been written by a post-mortem technician and edited by a medical practitioner.

It is undoubtedly useful to have such a simple and practical guide for the pathological dissections which so many district surgeons are required to undertake.

It will also be of great value to the numerous police technicians who are of such great help to district surgeons, especially in outlying areas.

The volume is clearly and attractively illustrated and there is a special chapter devoted to Medico-Legal Cases.

An unfortunate printer's error occurs in the index where 'dura mater' is printed as 'dura mata'.

Measurement of Human Performance

Researches on the Measurement of Human Performance. By N. H. Mackworth, M.B., Ch.B., Ph.D. (Pp. 156. 4s.) Medical Research Council Special Report Series, No. 268. London: His Majesty's Stationery Office.

Contents: *Part I*: *Vigilance Tests*. 1. Introduction. 2. Visual Vigilance Tests. 3. Auditory Vigilance Tests. 4. Discussion of Results of Vigilance Tests. 5. Main Conclusions on Vigilance Tests.
Part II: *Environmental Stress Tests*. 6. Tests for the Effects of Non-Lethal War Gases. 7. Tests for the Effects of High Atmospheric Temperatures. 8. Discussion of Environmental Stress Results. 9. Main Conclusions on Environmental Stress Tests. Acknowledgments. References.

Part I of this report describes experiments, conducted in the Cambridge Psychological Laboratory, which were designed to throw light on the deterioration of vigilance that commonly occurs after about half an hour of continuous watching of a radar screen for the faint signals that indicate the presence of vessels or aircraft, or of listening for the vibration of the engines of submarines. These clever experiments reveal beyond reasonable doubt that the deterioration is essentially the result of experimental extinction, as defined by Pavlov, although in this case the extinction is not complete.

One of the facts supporting this conclusion is that there was no significant deterioration over a period of two hours in the performance of subjects given Benzedrine before the experiment. It is known that Benzedrine prevents the experimental extinction of a conditioned reflex.

It seems to the reviewer that the author has not fully understood the logic of the statistical methods he has used. in Part II, e.g. he claims that a deterioration in performance at effective temperatures not higher than 87° F. falls within the range of random variation. This would be valid if different groups of subjects were tested at each of the several temperatures used; it is not valid if the same subjects are tested throughout.

Dermatology

Modern Practice in Dermatology. Edited by G. B. Mitchell-Heggs, *O.B.E.*, M.D., F.R.C.P. (Pp. 794 + xxv. With 319 illustrations and seven colour plates. 71s.) Butterworth and Company (Africa) Limited, 1 Lincoln's Court, Masonic Grove, Durban. 1950.

Contents: 1. The Structure, Anatomy, Physiology, Pathology and Function of the Skin. 2. History and Examination of a Patient, With Notes on Diagnosis. 3. General Principles of Treatment. 4. Common Congenital Disorders of the Skin. 5. Benign and Malignant New Growths. 6. Diseases Due to Physical Causes. 7. Exogenic Dermatitis. 8. Industrial Dermatitis, with Special Reference to Prevention, Recurrence and Prognosis. 9. Allergy in Diseases of the Skin. 10. Eczema. 11. Rosacea, Including Seborrhoea, Oleosa, Acne Vulgaris and Hyperidrosis. 12. Seborrhoeic Dermatitis. 13. Pityriasis Rosea. 14. Psoriasis. 15. Pyogenic Affections of the Skin. 16. Impetigo. 17. Virus Diseases. 18. Syphilis. 19. Tuberculosis and Sarcoidosis of the Skin. 20. Fungus Infections of the Skin. 21. Animal Diseases Transmissible to Man. 22. Scabies and Pediculosis. 23. Arthropods in Relation to Skin Disease. 24. Drug Eruptions. 25. Toxic Eruptions. 26. Lupus Erythematosus. 27. Bullous Eruptions: Dermatitis Herpetiformis and Pemphigus. 28. Psychosomatic Disorders. 29. Lichen Planus and the Lichenoid Eruptions. 30. Diseases Due to Circulatory Disorders. 31. Chilblains. 32. The Reticuloses and Kaposi's Sarcoma. 33. The Sclerodermias. 34. Skin Diseases of Warm Climates, and Cutaneous Manifestations of Malnutrition. 35. Dermatoses Caused by Protozoal Bacterial and Virus Infections. 36. Non-Communicable Dermatoses Especially Common in Warm Climates. 37. Diseases of the Skin Affecting the Mucous Membranes. 38. Cancer of the Mucous Membrane. 39. Disorders of the Scalp. 40. Disorders of the Skin Affecting the Nails. 41. Disorders of the Skin with Ocular Involvement. 42. Disorders of the Skin Mainly Affecting the Hands and Feet. 43. Disorders of the Ano-Genital Region. 44. Eruptions in the Napkin Area. 45. Disorders of the Skin Associated with Avitaminosis. 46. Cutaneous Manifestations of General Disease. 47. Diopsy: Its Indications and Technique. 48. Physiotherapy and Radiotherapy in Dermatological Conditions. 49. The Pharmeceutical Aspect. 50. Social Aspects of Dermatology. Index.

There is certainly no shortage of textbooks on dermatology but *Modern Practice in Dermatology* is not merely another one. Dr. Mitchell-Heggs' imposing volume is a symposium by a number of dermatologists of experience from the teaching schools throughout the British Commonwealth.

To each contributor has been assigned one or more chapters on the particular side-line of the speciality in which he is generally known to have interested himself most. Thus, to give a few examples, we have Muende writing on fungus diseases, Corsi on diseases of the nails, Loewenthal on diseases of malnutrition and of warm climates, etc.

In addition to the conventional aetiological division, several chapters are devoted to diseases of regions of the body. For the busy student or practitioner this must prove a great time-saving factor. A certain amount of overlapping naturally takes place; but as a different approach is used by each contributor, such repetition must prove more beneficial than otherwise.

South Africa is well represented by contributions from Gordon and Loewenthal. These are in keeping with the standard we have learned to expect from them.

Dr. Mitchell-Heggs is to be congratulated on his work both as editor and contributor. In all works on dermatology, photographs and diagrams are essential. Over 300 excellent ones are included.

This volume is recommended to practitioners and specialists interested in dermatology.

ALLERGY

Primer of Allergy. By Warren T. Vaughan, M.S., M.D. Revised by J. Harvey Black, M.D. (Pp. 175. £1 9s. 9d.) With illustrations by John P. Tillery. Third revised edition, 1950.) St. Louis: C. V. Mosby Company.

Contents: 1. Learn to Live with your Allergy. 2. Abracadabra. 3. The Allergic Constitution. 4. The State of Allergy. 5. The Enemy—Allergens. 6. Defense of the Realm—Methods of Combating Sensitization. 7. Liaison and Reconnaissance—Taking Inventory. 8. Plan of Attack—The Therapeutic Program. 9. A War of Attrition—The Long Drag. 10. Victory or Defeat? 11. General Orders—Directions to the Patient.

Although this small book has primarily been written to be put into the allergic patient's hands, there is much in it which the practitioner who has to deal with these difficult cases will find of use. It is written in a straightforward non-technical style, and the author has furnished many of the chapters with sets of questions and answers which cover quite a lot of useful ground.

As in a good many other American publications of this type, there are extensive tables of directions; for keeping a food diary, for wheat avoidance, for avoiding and removing house dust and so forth. One does get the impression that 'having an allergy' is a full-time occupation.

Naturally a good deal of the information given regarding allergens and special foodstuffs suitable for allergic patients refers only to the U.S.A.; but taken all round this is a useful small book which can safely be put into the hands of the majority of patients if they can afford to pay the very high price charged for a book of this size and type.

OBSTETRICS AND GYNAECOLOGY

Post-Graduate Obstetrics and Gynaecology. By F. J. Browne, M.D. (Aberd.), D.Sc., F.R.C.S. (Ed.), F.R.C.O.G. (Pp 501 + vi. With 107 illustrations. 57s. 6d.) Butterworth & Co. (Africa) Limited, 1 Lincoln's Court, Masonic Grove, Durban. 1950.

Contents: 1. The supports of the female pelvic organs. 2. Structure of the uterus, cervix and vagina. 3. The ovary. 4. The changes in the genital tract in the menstrual cycle. 5. The development of the placenta and membranes. 6. Development and abnormalities of the female genital organs. 7. Infections and inflammations of the genital tract. 8. Tuberculosis of the genital tract. 9. Gonorrhoea. 10. Puerperal pyrexia and puerperal sepsis. 11. Thrombosis in veins. 12. Physiology and pathology of lactation. 13. Stillbirth and neonatal death. 14. The third stage of labour and postpartum haemorrhage. 15. Shock in obstetrics. 16. Simmond's disease. 17. Relief of pain in childbirth. 18. Aetiology of toxaemias of late pregnancy. 19. Chronic hypertension in pregnancy. 20. Amenorrhoea. 21. Functional uterine haemorrhage. 22. Spasmodic dysmenorrhoea. 23. Tumours of the vulva and vagina. 24. Uterine Fibromyomas. 25. Endometriosis. 26. Cancer of the cervix. 27. Cancer of the body of the uterus. 28. Sarcoma of the uterus. 29. Chorion-epithelioma. 30. Tumours of the Fallopian tube. 31. Ovarian cysts and tumours. 32. Intersexuality. 33. Congenital malformations. 34. Heart disease in pregnancy. 35. Pulmonary tuberculosis in pregnancy. 36. Stress incontinence. 37. Oliguria and anuria. 38. Intestinal obstruction in pregnancy. 39. Abnormal uterine action. 40. Rupture of the uterus. 41. Action of drugs on the uterus. 42. The ureter in gynaecological conditions. 43. Pre-operative and post-operative care. 44. Post-operative complications in obstetrics and gynaecology. 45. Blood transfusion. Index.

The publication of F. J. Browne's *Post-Graduate Obstetrics and Gynaecology* is an important event for those who practise this specialty and for the many general practitioners who show a special interest in it. The book is based on lectures given by Professor Browne to post-graduate students preparing for higher qualifications in Obstetrics and Gynaecology.

Professor Browne's status in British Obstetrics and Gynaecology is such that this book, in conjunction with his other book, *Antenatal and Postnatal Care*, will be considered compulsory reading by most students preparing for higher qualifications.

A vast amount of valuable information, much of which is not ordinarily obtainable in textbooks, is to be found in these rather closely-printed pages. Future editions would benefit by the inclusion of more detail in many chapters, for the benefit of advanced students of the subject. An important feature is the excellent list of main references to the subject under discussion, at the end of each chapter.

There is a large number of beautiful photomicrographs, but future editions might be improved by more illustrations of macroscopic features.

In common with all first editions there are many minor omissions and errors. For instance, in the chapter on Salpingitis a serious omission is that no mention is made of the importance of cauterizing the endocervix before treatment can be considered complete. This site is the usual reservoir of infection and unless it is adequately dealt with recurrences are almost inevitable.

In the chapter on Metropathia Haemorrhagica it is surprising to find no mention of the fact that this condition is an anovulatory bleeding, and that morning temperature curves may be of assistance in diagnosis. The chapter on Virilizing Tumours contains no reference to theca cell tumours of the ovary as a cause of virilism.

However, in spite of these and other minor shortcomings, which no doubt will be corrected in future, this is a valuable volume which will find its way on to the bookshelves of most practising obstetricians and gynaecologists.

ACUTE INJURIES OF THE HEAD

Acute Injuries of the Head: Their Diagnosis, Treatment, Complications and Sequels. By G. F. Rowbotham, B.Sc. (Manch.), F.R.C.S. (Eng.). With a Foreword by Prof. Norman M. Dott, *C.B.E.* M.B., Ch.B. (Ed.), F.R.C.S. (Ed.). (Pp. 480 + xvii. With 259 illustrations, 34 in full colour. Third edition. 35s.) Edinburgh: E. & S. Livingstone Limited. 1949.

Contents: 1. The Mechanisms of Injuries of the Head. 2. Pathology. 3. Diagnosis of Closed Injuries of the Head. 4. Treatment of Closed Injuries of the Head and Surgical Technique. 5. Fractures of the Skull. 6. Open or Compound Wounds of the Head. 7. Traumatic Osteomyelitis. 8. The Results of Injury to Special Parts of the Brain and Skull. 9. The Sequels of Injuries of the Head. 10. Rehabilitation. 11. Post-Traumatic Epilepsy. 12. The Final Results of Head Injuries. 13. The Mechanism of Birth Injuries. 14. The Residual Illness. Index of Authors. General Index.

Rowbotham's *Acute Injuries of the Head* has reached a third edition within the short space of seven years. The book has grown rapidly in size. The second edition was almost double the size of the first and in the new edition it has become necessary to enlarge the volume further, although the price of the book has only been increased by 5s.

The author has had an opportunity of incorporating in the new volume the extensive experience of the last war and in a very interesting and stimulating preface Mr. Rowbotham takes stock of the position and adumbrates the important lines of investigation for further research work on head injuries: 'At autopsy on patients who died from head injuries it is often obvious that gross lesions such as contusions and haemmorrhages cannot account for the neurological signs that were observed clinically. Therefore, disordered function must have occurred in neurones distant from areas of damage of the degree than can be seen by naked eye. We know little of the nature of these neuronal changes; we likewise know nothing of the phenomenon where a reversible injury becomes irreversible and we are uncertain as to the exact anatomical site of neurones whose disordered function gives rise to the variegated neurological signs. It is to the solution of these problems that I would call the attention of those who wish to do research work on head injuries. Enough has been said on the physics of injury. To medical observers other than neurologists I would point out how fascinating it is to sit by the bedside of a man with a head injury and witness the return of consciousness. The time has now come when we should try to become a little clearer in our minds on what we think of unconsciousness; is unconsciousness a positive neurological condition or is it merely a negative one implying an absence or impairment of consciousness?' (p. viii).

Head injuries fall within the province of all medical practitioners. Indeed, one of the emphatic points which the author makes is that the subject of acute head injury concerns many others besides the neurosurgeon.

The importance of early and complete surgery is again emphasized and the author stresses the importance of medical as well as industrial rehabilitation for adequate recovery and return to duty.

One of the striking features of the superb colour illustrations in this edition is the remarkable sequence devoted to a pathological study of severe closed injuries of the head (Figs. 64-80).

Although the volume is one of the most practical and informative which has been written on the subject, it concerns itself also fully with the numerous theoretical aspects of the problem.

This beautifully illustrated and attractively produced book is of importance to physiologists and pathologists as well as general practitioners and surgeons.

ANATOMY ATLAS

Atlas of Human Anatomy. Volume II. By M. W. Woerdeman, M.D., F.R.N.A.Sc. (642 illustrations and index. Price: £7 the set, carriage extra.) Durban: Butterworth and Company (Africa) Limited, 1 Lincoln's Court, Masonic Grove. 1950. (This work is only sold in the set).

Contents: 1. Splanchnology: Digestive System (*Tractus digestivus*) figs. 1-145; Respiratory System (*Tractus respiratorius*) figs. 146-202; Urogenital System (*Tractus urogenitalis*) figs. 203-281. 2. Angiology: Cardiovascular System (*Systema cardiovasculare*) figs. 282-358; Lymphatic System (*Systema lymphaticum*) figs. 359-383. 3. Nervous System: Central Nervous System (*Systema nervosum centrale*) figs. 384-482; Peripheral Nervous System (*Systema nervosum periphericum*) figs. 483-567. 4. Organs of Sense: The Eye (*Organon visus*) and Accessory Organs, figs. 568-594; The Auditory and Static Organs (*Organon gustatoriumt staticum*) figs. 595-628; Gustatory Organ (*Organon gustatorium*) figs. 57, 61-64; Olfactory Organ (*Organon olfactorium*) figs. 146-154, 629; Skin (*Integumentum commune*) figs. 630-642. Index.

The second volume of Professor Woerdeman's attractive *Atlas of Human Anatomy* enhances the fine reputation which the first volume established.

Particularly striking are the three-dimensional diagrams of the central nervous system. Figure 458 (which illustrates the arachnoidal granulation in coronal section) is one of the most effective diagrams available. A considerable amount of embryological information is integrated into some of the diagrams, e.g. of the pituitary, and the completeness of this section can be appreciated from the figures devoted to the dermatomes and the hypothalamic nuclei.

The introduction of bronchograms is an excellent innovation in a modern atlas of anatomy. The autonomic nervous system is represented very comprehensively as well as very attractively and the diagrams of the lymphatic system should be of great assistance to the student dissector. The terminal section of the skin includes finger prints and palm prints.

The two volumes together make a very interesting and attractive atlas of reference for students as well as practitioners.

LOVE OR COCAINE?

Trial of Alma Victoria Rattenbury and George Percy Stoner. Edited by F. Tennyson Jesse. (Pp. 298 with seven photographs. 2nd ed. 15s.) London and Edinburgh: William Hodge and Company, Limited.

Contents: 1. First Day, Monday, 27th May 1935. 2. Second Day, Tuesday, 28th May 1935. 3. Third Day, Wednesday, 29th May 1935. 4. Fourth Day, Thursday, 30th May 1935. Appendices.

Mrs. Alma Victoria Rattenbury (a woman in her late thirties) and George Percy Stoner (a youth young enough to be her son) were charged with the murder of Mr. Rattenbury, a man of 67 years. It was Mr. Rattenbury's second marriage and Mrs. Rattenbury's third. The *ménage* certainly was an odd one. Stoner, employed as a chauffeur-handyman, lived with his employer's wife, his employer either not knowing or not caring about the relationship. The tragedy was born from this ill-assorted pattern of events.

The verbatim record of this trial is extremely valuable because it contains a very complete discussion of the points for and against cocaine addiction, raised as a defence in the case of the male accused. It was an interesting, novel and attractive line of defence and received very strong support from eminent and experienced practitioners, including no less an authority than Dr. Robert D. Gillespie, well known as the co-author of the textbook by Dr. Henderson and himself.

Dr. Gillespie's examination and cross-examination provide a most excellent monograph on the points of medico-legal importance likely to arise in a case of cocaine addiction and should, for this reason alone, be studied most carefully by those who may have occasion to give evidence in our Courts.

The defence evidence did not convince the jury that the male accused, a youth of tender years, was a cocaine addict; but it remains a very good presentation of the problem. On the other hand, some of the medical evidence, especially in relation to *contre coup* injuries of the head, certainly did not deserve the respectful attention which counsel gave it.

It is unlikely that to-day, some 15 years after the trial, a forensic pathologist would agree that 'the brain is simply in a bag there floating in water, and if you hit it on one side, it comes up against the other'. It has always been recognized that *contre coup* injuries occur diagonally opposite the site of impact when the moving head is suddenly arrested. By definition, *contre coup* injuries are not produced by a blow on a stationary head. In any event, Holbourn's work has demonstrated that the brain cannot rattle within the skull like a pea in a pod. Brain injuries, including *contre coup* injuries, are caused by sheer strains and not by compression effects.

Another point of interest and importance which arose in this trial illustrates the demarcation between expert and non-expert testimony. There can be little doubt that a question about the shape of an instrument and the direction of the blow inflicted, which caused a particular injury, is a medical one. Mr. Justice Humphreys very clearly and very skillfully, however, pointed out that that is where the expert evidence stops. A medical witness may say that the direction of the blow was from behind, but he cannot necessarily say, in his expert capacity, that the person who delivered the blow was standing behind the victim. The Judge was emphatic that the doctor was not in a position to make such a statement, which fell outside the confines of expert testimony. In Mr. Justice Humphrey's view, the jury could know as well as any surgeon whether it was possible to swing a weapon from the front or the rear of the victim in order that the blow should travel in the direction stated by the medical expert.

This subtle argument emphasizes that medical witnesses should be careful to give as expert evidence only those answers which depend upon their professional knowledge and skill. They should never knowingly invest with a professional status an opinion which does not depend on that special knowledge which the expert alone possesses. As the example discussed illustrates, the witness requires to study the position carefully so as not to create in the minds of the jury or the Court an impression of authority which is quite unjustifiable.

This volume is a worthy addition to the *Notable British Trial Series.*

SCHOOL EPIDEMICS

Epidemics in Schools. By E. A. Cheeseman. (Pp. 96 with tables. 3s.) London: His Majesty's Stationery Office. 1950.

Contents: 1. Introduction. 2. Populations Exposed to Risk. 3. Main Causes of Sickness. 4. Influenza and Nasopharyngeal Infection. 5. Infectious Diseases. 6. Rheumatism. 7. Otitis Media. 8. Sinusitis. 9. Pneumonia. 10. Gastro-Intestinal Disorders. 11. Appendicitis. 12. Jaundice. 13. Trauma. 14. Tinea Cruris. 15. Conjunctivitis. 16. Tuberculosis. 17. Deaths. 18. Time lost from School. 19. Summary and Conclusions. References.

This publication is the Medical Research Council's Special Report Series No. 271, and is an analysis of the data collected during the years 1935 to 1939. The first five-year period was published in the Special Report Series No. 227. The second five-year period was interrupted by the second world war. After the war such records as were found to have escaped the various hazards, were studied by Dr. E. A. Cheeseman, of the Council's Statistical Research Unit, at the London School of Hygiene and Tropical Medicine. The present report also brings into account the earlier records, whenever necessary, thereby presenting a continuous study of nearly ten years for a number of residential schools.

While the report abounds in a great wealth of data, and interesting, often very significant, conclusions, it is mainly of a statistical nature, and to be fully appreciated calls for a thorough knowledge of vital statistics. It should be of special interest to school medical authorities, and medical officers of health.

The schools taking part were: 1. Naval boarding schools. 2. Girls' boarding schools. 3. Boys' boarding schools.

In general, the records provide a valuable picture of the incidence of different types of sickness, their seasonal and

sex differences, and also allow study of points of particular interest with reference to specific infectious diseases. The classification of nasopharyngeal infection may be questioned, but will hardly affect the important conclusions. There is an interesting analysis of the apparent sex difference in the incidence of nasopharyngeal infection, viz. that the apparently higher incidence in girls' schools, may be due to the greater attention given to minor ailments, e.g. by removing mild cases of illness from the classroom. There is further a significant indication that there is a limited spread of infectious diseases, and a lesser incidence of the more serious complications, in the girls' schools. This suggests far-reaching implications in the prevention of such crippling disabilities as chronic ear or heart disease.

Evidence was again found of the association between herpes zoster and chicken pox—in this series zoster occurred as a rule where there was a previous history of chicken pox.

Over the whole 29 terms a high degree of association was found between the incidence of acute and subacute rheumatism on the one hand, and scarlet fever on the other hand, the coefficient being very high in the case of girls, viz. r = + 0.666.

ELECTROCARDIOGRAPHIC ATLAS

Atlas D'Electrocardiographie. By V. Fattorusso et O. Ritter. (Pp. 260. With 219 figures. Fr. 2,200. 2nd ed.) Paris: Masson et Cie. 1950.

This atlas of electrocardiography is one of the first routinely to depict unipolar leads throughout.

Commencing with an introduction which deals with cardiographic rationale and technique, it passes on to the physiological tracing and its normal variants. Thereafter follow sections which deal with abnormalities of rhythm, conduction defects, myocardial infarction and the cardiogram in various syndromes. These are adequate and the illustrative records satisfyingly representative.

A special word of praise is due to the authors for the schematic presentation of complexes both normal and abnormal, which explain their electro-physiological derivation and will prove very helpful to the beginner.

The book closes with interesting notations on the vectorcardiogram, oesophageal leads and a discussion on cavity potentials.

All the electrocardiograms are clearly reproduced and the descriptive legends are always clear and concise.

Altogether this is an excellent handbook for the student and general practitioner who wishes to acquire a working knowledge of modern cardiography.

OLD AGE

Old Age: Some Practical Points in Geriatrics and Gerontology. By T. H. Howell, M.R.C.P. (Pp. 108, with 32 tables. 10s. 6d. 2nd ed.) London: H. K. Lewis & Co. Ltd. 190.

Contents: 1. Approach to Old Age. 2. Care, Comfort and Management. 3. Temperature in Old Age. 4. Pulse Rate in Old Age. 5. The Haemoglobin Level in Old Age. 6. Arterial Thickening in Old Age. 7. Senile Deterioration of the Central Nervous System. 8. Rheumatic Disease. 9. Chronic Bronchitis. 10. The Cardiovascular System in Old Age. 11. Progressive Cerebral Ischaemia. 12. The Kidney in Old Age. 13. Geriatric Rehabilitation. 14. Incidence of Cancer. 15. Disease in Old Age. 16. Some Clinical Signs. 17. Morbid Anatomy of Old Age. 18. A.B.C. of Geriatrics. Index.

Dr. Howell's little book on *Old Age* is largely based on his own investigations of a group of some 300 Chelsea Pensioners. That many 'normal' figures and findings do not necessarily apply to old people is evident to any one who has worked with them, but Dr. Howell's simple investigations demonstrate clearly and statistically the degree of alteration from the so-called normal which can occur in perfectly healthy people over 65. In the nervous system, e.g. he found that nearly one-third of the men, even in his earliest age group, had lost either light or accommodation reaction of the pupil; while a completely inactive pupil was found in two thirds of those over 85. He found that half of the men between 65 and 70 had lost their ankle jerks, and in 25% of men over 75 the knee jerks could not be elicited.

The range of normal temperature was greater in old age than in earlier life, and there was also a great variation in the resting pulse rate in healthy pensioners. He found no evidence of a lowering of haemoglobin level beyond the normal of younger people.

An interesting chapter on arterial thickening makes no attempt to define a normal blood pressure for old age. The chapters on geriatric rehabilitation and on rheumatic disease must suggest to the reader the great amount of help which can be given to the aged for their chronic diseases, and these two chapters, particularly, should be read with great benefit by nurses, occupational therapists and other medical auxiliaries, as well as by medical administrators!

This little book can be thoroughly recommended to all medical practitioners who deal in any way with old people, although there are one or two points of therapy, with which one might disagree, e.g. 25 mg. digoxin is equivalent to more than a grain of digitalis; while the injunction to administer Mersalyl by intravenous injection is not advisable except in rare cases. Apart from odd points like these, the book is authoritative, interesting and easy to read.

PRESENT HEALTH CONDITIONS IN ISRAEL

The Hebrew Medical Journal, Volume I (1950). Editorial Office: 983 Park Avenue, New York 28, N.Y., U.S.A.

The appearance of Volume I, 1950 of *The Hebrew Medical Journal* (*Harofé Haivri*), inaugurates the 23rd year of its publication under the editorship of Moses Einhorn, M.D.

Written in Hebrew, with English summaries, the Journal is a contribution to improving the health of the new State of Israel, aiding as it does the development of Hebrew medical literature, and thus the newly-established Hebrew University-Hadassah Medical School.

In the current number a symposium is presented on various phases of disease and health in Israel. Among the articles of interest are *Orthopedic Problems in Israel* by I. Pulvermacher, M.D., *Fighting Deafness in Israel* by Ahron Schwarzbart, M.D., and *Kupat Holim—The Labor Health Service in Israel* by Moshé Rabinowitz, Director of Kupat Holim in Tel Aviv.

In the section on *Bible and Medicine*, Dr. C. Genazzani presents a unique essay on *Pathological Symptoms caused by the Famine during the Siege of Jerusalem by Nebuchadnezzar, King of Babylon.* In the section on Old Hebrew Medical Manuscripts, Dr. Zussmann Muntner of Jerusalem presents a historical article on *Ascites—A 10th Century Manuscript* by Yizchak Ben Shlomo Ha-Yisraeli. In addition, under the heading of *Personalia*, are presented biographical sketches on the life and works of Professor Hermann Strauss and Dr. Howard Lilienthal, noted American surgeon.

TROPICAL HYGIENE

Tropical Hygiene and Sanitation. By H. Jordan, *M.B.E.*, M.R.San.I. (Pp. 357 + xii. With 99 figures. 5s. 2nd. ed.) London: Baillière, Tindall & Cox. 1950.

Contents: 1. Air and Ventilation. 2. Water. 3. Sanitary Building Construction. 4. Refuse Disposal and House Drainage. 5. Food and Meat. 6. Disinfection. 7. Communicable Diseases. 8. Medical Entomology. 9. The Destruction of Rats. Appendix Nos. I and II. Index.

As one of the few books specially written for training Sanitary Inspectors in the tropics, this new edition will be warmly welcomed. The first edition was written for use in East Africa; in the new edition the scope has been widened so that it is applicable in any of the British Dependencies in the tropics. It is intended for use by those studying for the examinations of the Royal Sanitary Institute, and for this purpose it can be strongly recommended; but there is so much ground covered in such a small space, and inevitably so much condensation, that a lecturer whose class uses this textbook will have to do a great deal of explanatory filling in of the gaps.

There is always the danger that a student can answer the

examination questions without really understanding the subject, and throughout this book there is little attempt to get down to the real practical details that will be met when the examinations are over. For example, there is the bald statement that one tests for excess chlorine in water by using potassium iodide and starch solution. One can imagine the consternation of the new Inspector who finds that he has been provided with *cadmium* iodide and starch, which is the more usual mixture. In another place the text reads as though in using D.D.T. one is supposed to mix it with China clay before use. On the other hand, though it can hardly be called a reference book, it does contain a mine of information within its small covers which no prospective tropical sanitarian can afford to miss.

There is one other criticism that might be mentioned. It is a pity that the book has been produced in pocket size. This has resulted in the use of type small enough to strain the eyesight, and in illustrations which in some places are almost undecipherable.

Asthma and Gold Therapy

The Modern Treatment of Asthma with Special Reference to Gold Therapy. By L. Banszky, M.D. (Berlin), L.M.S.S.A. (Lond.). (Pp. 135. 10s. 6d.) Bristol: John Wright and Sons Limited. London: Simpkin Marshall Limited. 1950.

Contents: *Preface*. 1. Theories of Asthma. 2. Allergy. 3. Asthma and Tuberculosis. 4. Gold Treatments. 5. Vagotonia. 6. The First Examination of an Asthma Patient. 7. Gold Treatment of Asthma. 8. The Result of Gold Treatment in Asthma. 9. Antidote to Gold Poisoning: B.A.L. 10. Histamine and Asthma. 11. The Symptomatic Treatment of the Asthma Attack. 12. Symptomatic and Curative Treatments by Various Authors. 13. Diet and Other Measures. Appendix. References. Index of Authors.

In reading this small book one cannot but gain the impression that the author is obsessed with the idea of treating asthmatics with gold salts, an idea to which few of his colleagues will subscribe. Apart from this the book gives a very brief and incomplete account of asthma, its pathology, symptoms and treatment. The theory is advanced that asthma and pulmonary tuberculosis are closely related, and that latent tuberculosis is very commonly found in asthmatics.

In his preface the author states that his book is meant to act as a supplement to the many textbooks on asthma already in existence; but much of the information given is of such a scrappy nature as to be useless. Perhaps the best and most interesting chapter deals with the relationship of histamine to asthma. This chapter suggests that the most useful way of employing histamine therapeutically is by a method of ionization.

Foot Mechanics

Foot Mechanics: For Chiropodists and Students. By Leslie R. Smart, S.R.N., M.Ch.S. With a Foreword by Neville Taylor, M.Ch., F.R.C.S. (Eng.) (Pp. 106 + viii. With 13 figures. (6s.) London: Ballière, Tindall & Cox. 1950.

Contents: Foreword. Preface. 1. Introduction. 2. The Normal Foot and its Functions. 3. Affections and Deformities of the Foot. 4. Methods of Orthopaedic Diagnosis. 5. The Use of X-rays in the Diagnosis of Abnormalities and Clinical Photography. 6. Methods of Treatment. 7. Systems of Foot Correction. 8. Orthopaedic Supports and Footwear. 9. Minor Manipulative and Orthopaedic Surgery of the Foot. 10. Conclusion. Case Histories. Bibliography. Index.

This textbook will form a useful adjunct to the library of the student chiropodist, as well as that of the practitioner. It increases the small number of textbooks on specialized sections of the chiropody syllabus, as prescribed to-day in Britain by the Royal Colleges of Surgeons and Physicians; and it deals clearly with a department of the syllabus, the various sections of which have not hitherto been obtainable within one cover.

The foot is regarded as a weight-bearer, shock-absorber and above all as a mobile locomotory organ. This trains the student's thought in the correct channel, the foot in chiropody being too often seen and treated as a stationary object.

The chapter on minor manipulative and orthopaedic surgery of the foot, though in some respects, such as in the detailed treatment of anaesthesia, rather premature for a British textbook, is nevertheless vastly interesting to the student, and essential for the interrelation of his work with that of the orthopaedic surgeon. The author has, in this book, brought together many of the different branches of medicine which have a relation to chiropody and this will aid the practitioner when referring his patients for further consultation to the medical profession for X-ray, surgery or manipulative treatment.

With reference to the modern trend of prescribing foot supports for too many common foot ailments, it is to be regretted that the author did not make his commendable chapter on orthopaedic supports and footwear more comprehensive. The various alterations, prophylactic, palliative and corrective, which are possible in a shoe, could also well have found a chapter in this book.

Stress and the Endocrines

Stress. By Hans Selye, M.D., Ph.D. (Prague), D.Sc. (McGill), F.R.S. (Canada). (Pp. 822 + xx + 203R. With illustrations.) Canada: Acta, Inc. Medical Publishers. First Edition, 1950.

Contents: 1. Reviews. 2. History. 3. General Physiology and Pathology of Systemic Stress. 4. Special Physiology and Pathology of Systemic Stress. 5. Metabolism. 6. Basal Metabolic Rate. 7. Body Temperature. 8. Carbohydrate Metabolism. 9. Lipid Metabolism. 10. Nitrogen Metabolism. 11. Salt and Water Metabolism. 12. Hormones and Hormone-Like Substances. 13. Enzymes. 14. Vitamins. 15. Hemoglobin and its Derivatives. 16. Various other Substances. 17. Metabolic Diseases of Adaptation. 18. Morphologic and Functional Changes in the Various Organs. 19. The Endocrines. 20. Skeletal System. 21. Blood Count. 22. Hemopoietic System. 23. Lymphatic Vessels and Lymph-Flow. 24. Cardiovascular System. 25. Kidney. 26. Respiratory System. 27. Muscular System. 28. Nervous System. 29. Sense Organs. 30. Gastrointestinal System. 31. Liver. 32. Salivary Glands. 33. Skin and Appendages. 34. The 'Brown Fat' or 'Hibernating Gland'. 35. Absorption. 36. Serous Cavities. 37. Inflammation, Phagocytosis and Capillary Permeability. 38. Serologic Reactions. 39. Wound Healing and Renegration. 40. Neoplasia. 41. Malformations. 42. Electric Potential. 43. General Summary. Index.

The name of Selye has become indissolubly associated with the General Adaptation Syndrome. The reaction of the organism to stimuli of all kinds has been explored quantitatively and precisely by him and has thrown into relief the fundamental role played by the adrenal glands. A considerable preliminary account of this interesting work was, in part, incorporated in the author's *Textbook of Endocrinology* first published in 1947.

The present volume is an encyclopaedic account of the prodigious labours which have produced a vast quantity of experimental results covering specifically the reaction of the organism to stress. Selye's thesis introduces a unifying conception of the pathogenesis of almost every disease to which animal flesh is heir. Such a radical proposition almost reflexly evokes a certain amount of scepticism, particularly in the light of the rather severe criticism to which Professor Selye's recent Heberden Oration has been subjected in the correspondence columns of the *British Medical Journal* of 8, 15 and 22 July 1950.

Although considerable controversy may develop about the philosophical implications of Selye's work, the present volume is a comprehensive account of the experimentally determined facts on which Selye's theories are based.

It is, therefore, not only an important contribution to experimental endocrinology but also becomes an essential book of reference for all those interested in one of the most important biological concepts advanced in our time.

CORRESPONDENCE

Pulmonary Suppuration in the Bantu

To the Editor: I was greatly interested to read the article on 'Suppurative Disease of the Lungs in the Bantu' by Mr. G. R. Crawshaw and Mr. L. Fatti. I noted the prominent place they gave to postural drainage in treatment and in this connection I should like to point out the great value of the old and well-tried Transpulmin in loosening up the bronchial secretions and rendering the cough considerably more productive; this helps the patient to cough up his sputum and to establish an adequate drainage.

M. M. Martin, M.B., M.R.C.P. (Lond.).
19 Hollycroft Avenue,
London, N.W.3.
17 October 1950.